ACTAAP

Arkansas Comprehensive Testing, Assessment, and Accountability Program

Teacher Handbook

Grade 7
Benchmark Examination

April 2007
Administration

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Arkansas Department of Education

Teacher Handbook—2007 Benchmark Grade 7

Table of Contents

Teacher Handbook—2007 Benchmark Grade 7

Table of Contents

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Table of Contents

Introduction—2007 Benchmark Grade 7

The **Arkansas Comprehensive Testing, Assessment, and Accountability Program (ACTAAP)** Benchmark Examinations are comprehensive examinations currently administered to students in grades 3 through 8. They consist of multiple-choice questions in Mathematics, Reading, Writing, and Science, as well as open-response questions in Mathematics, Reading, and Science and a Writing component that directly assess student writing. The Arkansas *Mathematics Curriculum Framework*, *English Language Arts Curriculum Framework*, and *Science Curriculum Framework* are the basis for the development of the Benchmark Examinations.

This handbook provides information about the scoring of the grade 7 student responses to the open-response items in Mathematics, Reading, and Science and to the direct Writing prompts. It describes the scoring procedures and the scoring criteria (rubrics) used to assess student responses. Copies of actual student responses are provided, along with scores given to those responses, to illustrate how the scoring criteria were applied in each content area.

Additional information about the Benchmark Examinations is available through the Arkansas Department of Education. Questions can be addressed to Dr. Gayle Potter at 501-682-4558.

The multiple-choice and open-response test items for the Mathematics, Reading, and Science components of the Benchmark Examinations are developed with the assistance and approval of the Content Advisory Committees. All passages and items on the Benchmark Examinations are based on the Arkansas Curriculum Frameworks and developed with the assistance and approval of Content Advisory Committees and Bias Review Committees. These committees are composed of active Arkansas educators.

While multiple-choice items are scored by machine to determine if the student chose the correct answer from four options, responses to open-response items must be scored by trained "readers" using a pre-established set of scoring criteria.

Reader Training

Readers are trained to score only one content area, but the training procedures are virtually identical for Mathematics, Reading, and Science readers. Qualified readers for the Arkansas scoring will be those with a four-year college degree in English, language arts, education, mathematics, science, or related fields.

Before readers are allowed to begin assigning scores to any student responses, they go through intensive training. The first step in that training is for the readers to read the Mathematics or Science open-response item or the Reading passage and its item as it appeared in the test booklet and to respond—just as the student test takers are required to do. This step gives the readers some insight into how the students might have responded. The next step is the readers' introduction to the scoring rubric. All of the specific requirements of the rubric are explained by the Scoring Director who has been specifically trained to lead the scoring group. Then responses (anchor papers) that illustrate the score points of the rubric are presented to the readers and discussed. The goal of this discussion is for the readers to understand why a particular response (or type of response) receives a particular score. After discussion of the rubric and anchor papers, readers practice scoring sets of responses that have been pre-scored and selected for use as training papers. Detailed discussion of the responses and the scores they receive follows.

After three or four of these practice sets, readers are given "qualifying rounds." These are additional sets of pre-scored papers, and, in order to qualify, each reader must score in exact agreement on at least 80% of the responses and have no more than 5% non-adjacent agreement on the responses. Readers who do not score within the required rate of agreement are not allowed to score the Benchmark Examinations responses.

Once scoring of the actual student responses begins, readers are monitored constantly throughout the project to ensure that they are scoring according to the criteria. Daily and cumulative statistics are posted and analyzed, and Scoring Directors or Team Leaders reread selected responses scored by the readers. These procedures promote reliable and consistent scoring. Any reader who does not maintain an acceptable level of agreement is dismissed from the project.

Scoring Procedures

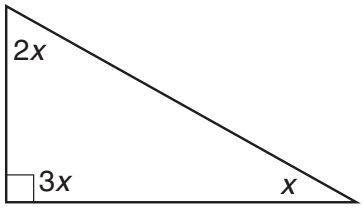
All student responses to the Benchmark Examinations open-response test items are scored independently by two readers. Those two scores are compared, and responses that receive scores that are non-adjacent (a "1" and a "3," for example) are scored a third time by a Team Leader or the Scoring Director for resolution.

This Teacher Handbook includes the Mathematics and Science open-response items and the Reading passages with their open-response items as they appeared in this year's test. The specific scoring rubric for each item and annotated response for each score point of the rubric follows. The goal is for classroom teachers and their students to understand how responses are scored. It is hoped that this understanding will help students see what kind of performance is expected of them on the Benchmark Examinations.

MATHEMATICS RESPONSES

Mathematics Item A—2007 Benchmark Grade 7

The triangle below has angle measures as shown.



1. Write an algebraic expression that can be used to show the relationship of the angle measures of this triangle.

2. Solve for x in the equation found in Part 1. Show each step of your work.

3. Calculate the measures of all three angles of this triangle. Show your work.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

Mathematics Item A Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The correct label of " ° " or "degrees" is used in Part 3.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**1 point possible** 1 point: **Correct answer: $x + 2x + 3x = 180$.**
2	**2 points possible** 2 points: **Correct solution of $x + 2x + 3x = 180$ with all steps shown.** Ex: $x + 2x + 3x = 180,\ 6x = 180,\ \frac{6x}{6} = \frac{180}{6},\ x = 30$ Or **Correct solution of Part 1 equation which leads to correct answer with all steps shown.** Ex: $3x = 90,\ \frac{3x}{3} = \frac{90}{3},\ x = 30$ OR 1 point: **Give credit for the following:** • Correctly solves $x + 2x + 3x = 180$, work is incomplete. Ex: $x + 2x + 3x = 180$, $x = 30$, or • Solves $x + 2x + 3x = 180$—Work contains 1 calculation error, but procedures are correct. Ex: $x + 2x + 3x = 180$, $5x = 180$ $\frac{5x}{5} = \frac{180}{5} = 36$, or • Correctly solves incorrect equation given in Part 1. Ex: $x + 2x + 3x = 360$, $6x = 360,\ x = 60$ Note: No credit for measuring using a protractor.
3	**1 point possible** ½ point: **Three correct measures of angles of the triangle.** Or **Three correct measures based on the value for *x* found in Part 2.** Give credit for the following: • 30, 60, 90 (degrees) AND ½ point: **Correct and complete procedure shown and/or explained.** Work may contain a calculation or copy error and may be based on an incorrect value for *x* found in Part 2. Give credit for the following: • $x = 30,\quad 2x = 2(30) = 60,\quad 3x = 3(30) = 90$

Solution and Scoring (continued)

Part	Points
4	**2 points possible** **Special case for Parts 2 and 3** 2 points: Student abandons Part 1 and uses diagram: $3x = 90^{\circ}$ $\frac{3x}{3} = \frac{90}{3} = 30, \quad x = 30^{\circ}$ $2x = 2(30) = 60^{\circ}$ OR 1 point: $3x = 90^{\circ}$ $x = 30^{\circ}$ $2x = 60^{\circ}$, or Work contains a calculation error: Ex: $3x = 90$ $x = 30$ $2x = 2(30) = 70$

1. $2x + 3x + x = 180°$

2. $2x + 3x + x = 180°$

$\frac{6x}{6} = \frac{180°}{6}$

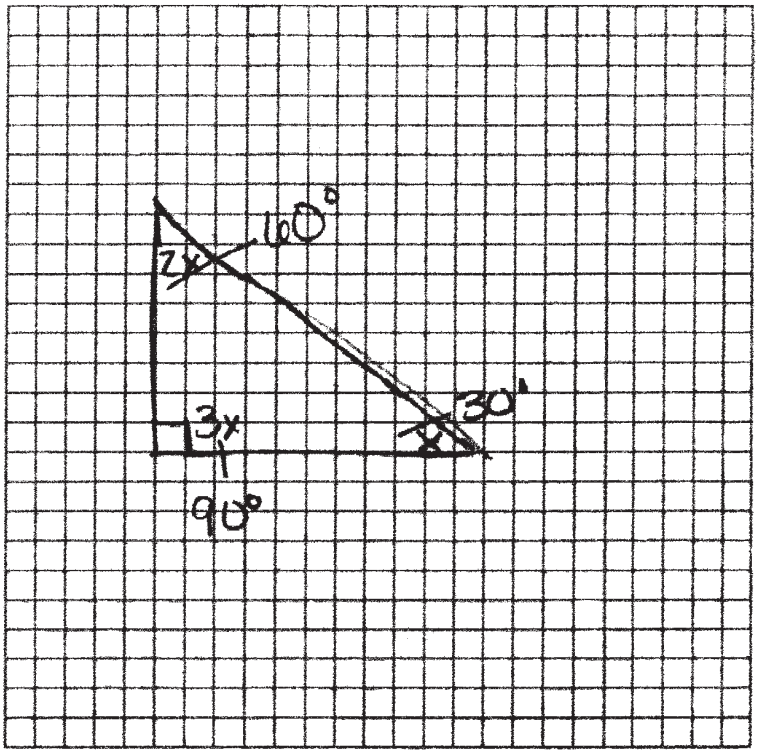
$x = 30°$

3. $2x\ 3x + x = 180°$

$2(30) = 60°$ $3(30) = 90°$

$x = 30°$

$30° + 60° + 90° = 180°$



SCORE: 4 **Points**

Part 1:

Correct equation:	$2x + 3x + x = 180°$	1

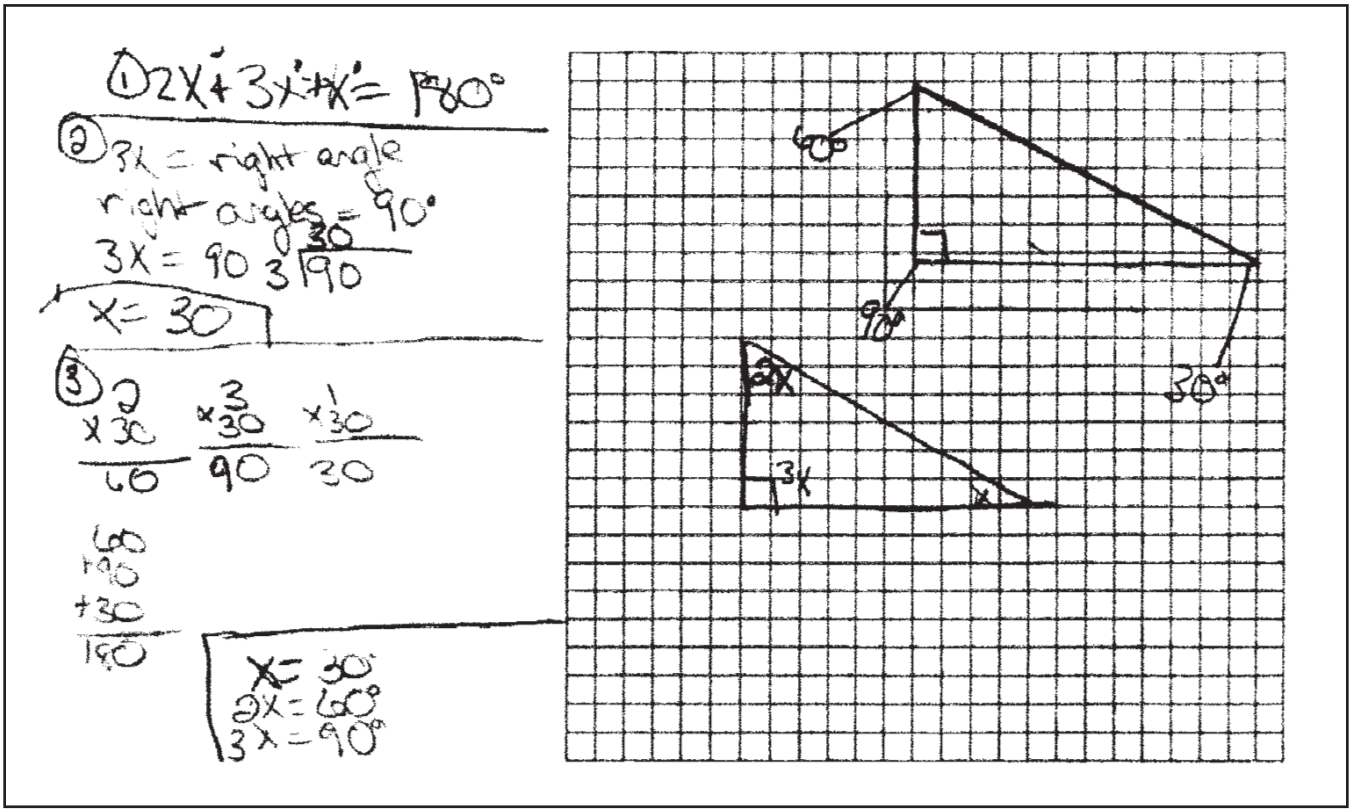
Part 2:

Correct answer:	$30°$	1
Correct and complete procedure:	$\frac{6x}{6} = \frac{180}{6} = \#$	1

Part 3

Correct answers:	$30°, 60°, 90°$	½
Correct and complete procedure:	$2(30) = 60°, 3(30) = 90°$	½

TOTAL POINTS: **4**



SCORE: 3 **Points**

Part 1:

Correct equation: $2x + 3x + x = 180°$ — 1

Parts 2 and 3: Special Case

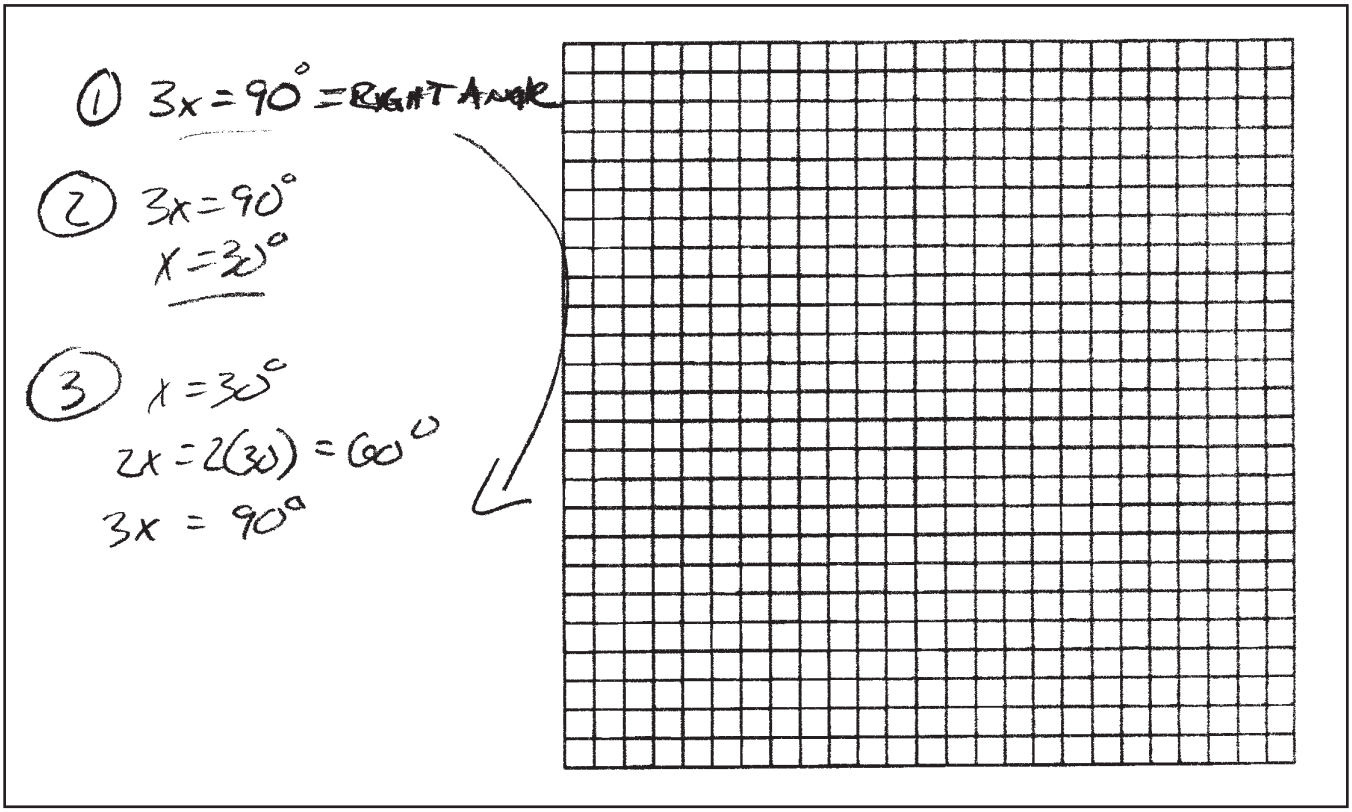
Correct and complete equation and solution: — 2

$3x$ = right angle

$3x = 90$, $x = 30$

2	3	1
x 30	x 30	x 30
60	90	30

TOTAL POINTS: **3**



SCORE: 2 **Points**

Part 1:

Incorrect equation:	$3x = 90° =$ Right Angle	–

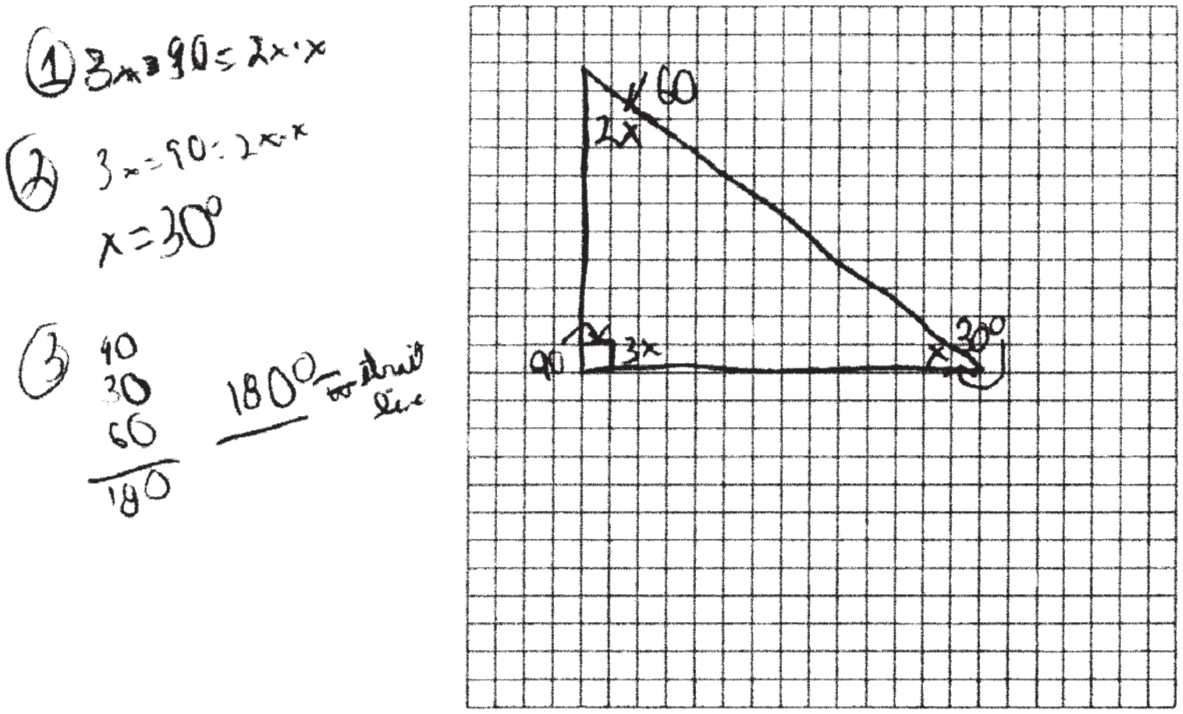
Part 2:

Correct answer:	30°	1
Procedure missing:		–

Part 3

Correct answers:	30°, 60°, 90°	½
Correct and complete procedure:	$2x = 2(30) = 60°$, $3x = 90°$	½

TOTAL POINTS: **2**



SCORE: 1 **Points**

Part 1:

Incorrect equation:	$3x = 90 = 2x \cdot x$	–

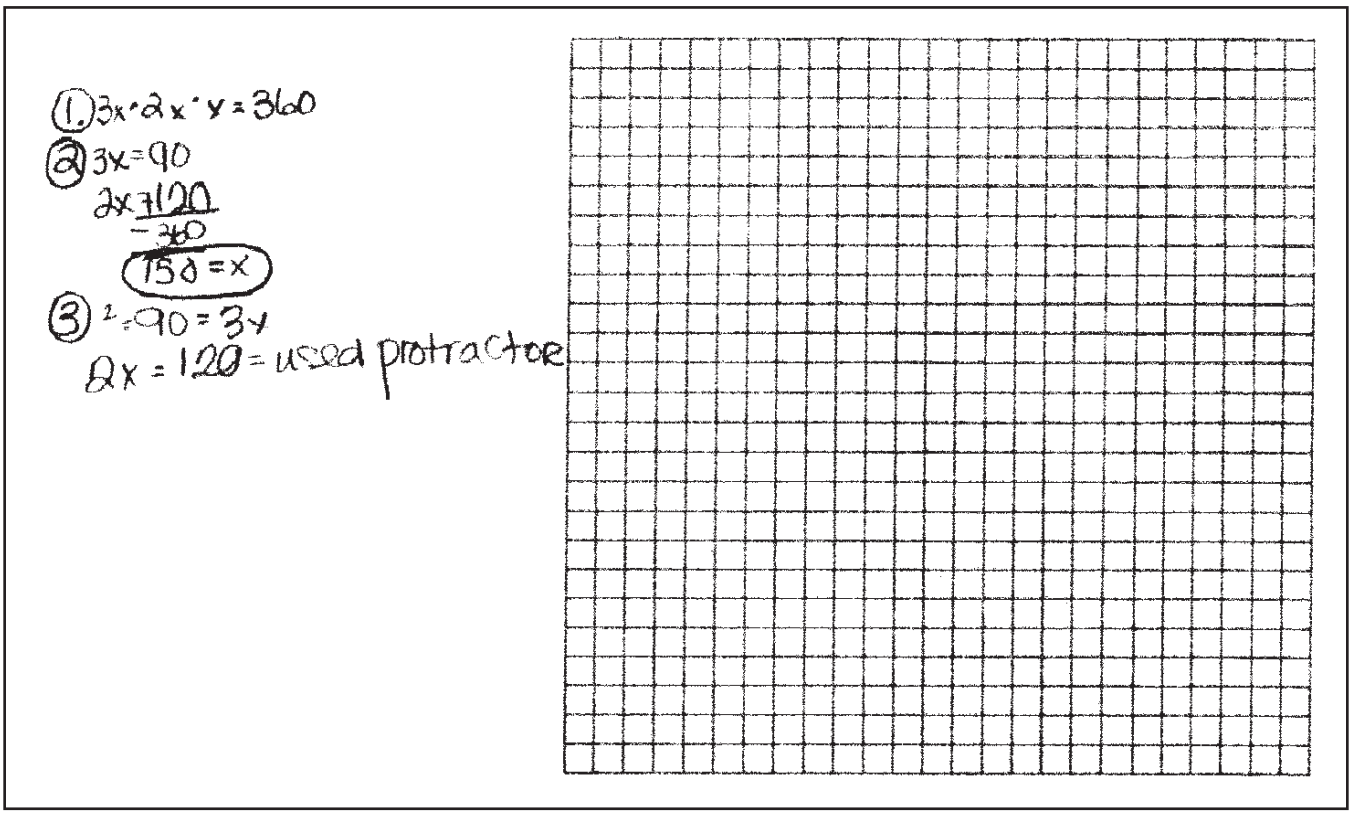
Part 2:

Correct answer:	$x = 30°$	1
Procedure missing:		–

Part 3

Correct answers:	30, 60, 90	½
Procedure missing:		–

TOTAL POINTS: **1 ½**



SCORE: 0 **Points**

Part 1:

Incorrect equation: $3x \cdot 2x \cdot x = 360$ –

Part 2:

Incorrect answer: $x = 150$ –

Incorrect procedure: $3x = 90$ –
$2x = \underline{120}$
$\quad -360$
$\# = x$

Part 3

Incorrect answers: $^2 = 90 = 3x$, $2x = 120$ –

Incorrect procedure: Used protractor –

TOTAL POINTS: **0**

Mathematics Item B—2007 Benchmark Grade 7

Suppose a bag contains 9 cubes, with 3 each of the colors brown, orange, and purple. The table shows the results after the experiment has been repeated 200 times by picking a cube from the bag, recording its color, and putting it back in the bag.

Outcome	Frequency
brown	64
orange	70
purple	66

1. What is the experimental probability of drawing an orange cube? Show your work and/or explain your answer in simplest terms.

2. What is the experimental probability of drawing a cube that is **not** purple? Show your work and/or explain your answer in simplest terms.

3. What is the experimental probability of drawing a cube that is either brown or purple? Show your work and/or explain your answer in simplest terms.

4. How did the experimental results in Part 3 compare to the theoretical probability? Show your work and/or explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1, 2, 3, AND 4.

Mathematics Item B Scoring Rubric—2007 Benchmark Grade 7

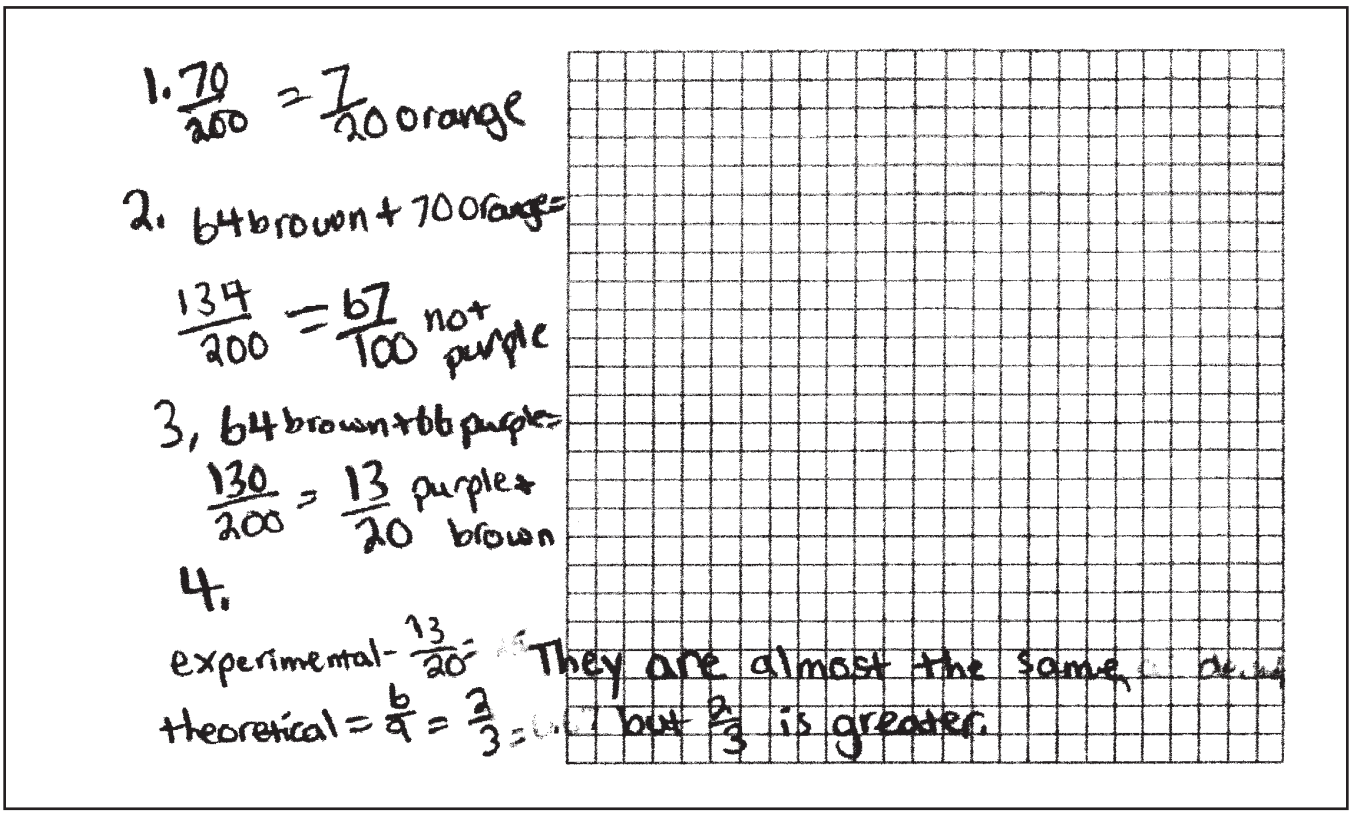
SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**1 point possible** ½ point: **Correct answer: $\frac{7}{20}$ (must be reduced), or 35%, or .35, or 7 out of 20.** AND ½ point: **Correct procedure shown and/or explained.** Give credit for the following or equivalent: • "Orange was drawn 70 times out of 200 times," or • $\frac{70}{200}$
2	**1 point possible** ½ point: **Correct answer: $\frac{67}{100}$ (must be reduced), or 67%, or .67, or 67 out of 100.** AND ½ point: **Correct procedure shown and/or explained.** Work may contain a calculation or copy error. Give credit for the following or equivalent: • Purple was drawn 66 times out of 200. $200 - 66 = 134$, $\frac{134}{200}$, or • $P(O \text{ or } B) = \frac{(64+70)}{200} = \frac{134}{200}$
3	**1 point possible** ½ point: **Correct answer: $\frac{13}{20}$ (must be reduced), or 65%, or .65, or 13 out of 20.** AND ½ point: **Correct procedure shown and/or explained.** Work may contain a calculation or copy error. Give credit for the following or equivalent: • $P(B \text{ or } P) = 64 + 66 = 130$, so it's $\frac{130}{200}$

Solution and Scoring (continued)

Part	Points
4	**1 point possible** 1 point: **Give credit for the following or equivalent:** May be based on incorrect probability in Part 3. • Correct comparison with correct and complete explanation. Theoretical Probability: $\frac{6}{9}=\frac{2}{3}=.667$ Experimental Probability: $\frac{13}{20}=.65$ So the Theoretical Probability > Experimental Probability, or • Both probabilities stated but comparison not made. Ex: Theoretical Probability = .667 Experimental Probability = .65 OR ½ point: **Correct procedure used but work is incomplete.** Comparison may or may not be made. Ex: Theoretical Probability is about $\frac{67}{100}$, so the Experimental Probability is lower.



SCORE: 4 **Points**

Part 1:

Correct answer:	$\frac{7}{20}$	½
Correct and complete procedure:	$\frac{70}{200} = \#$	½

Part 2:

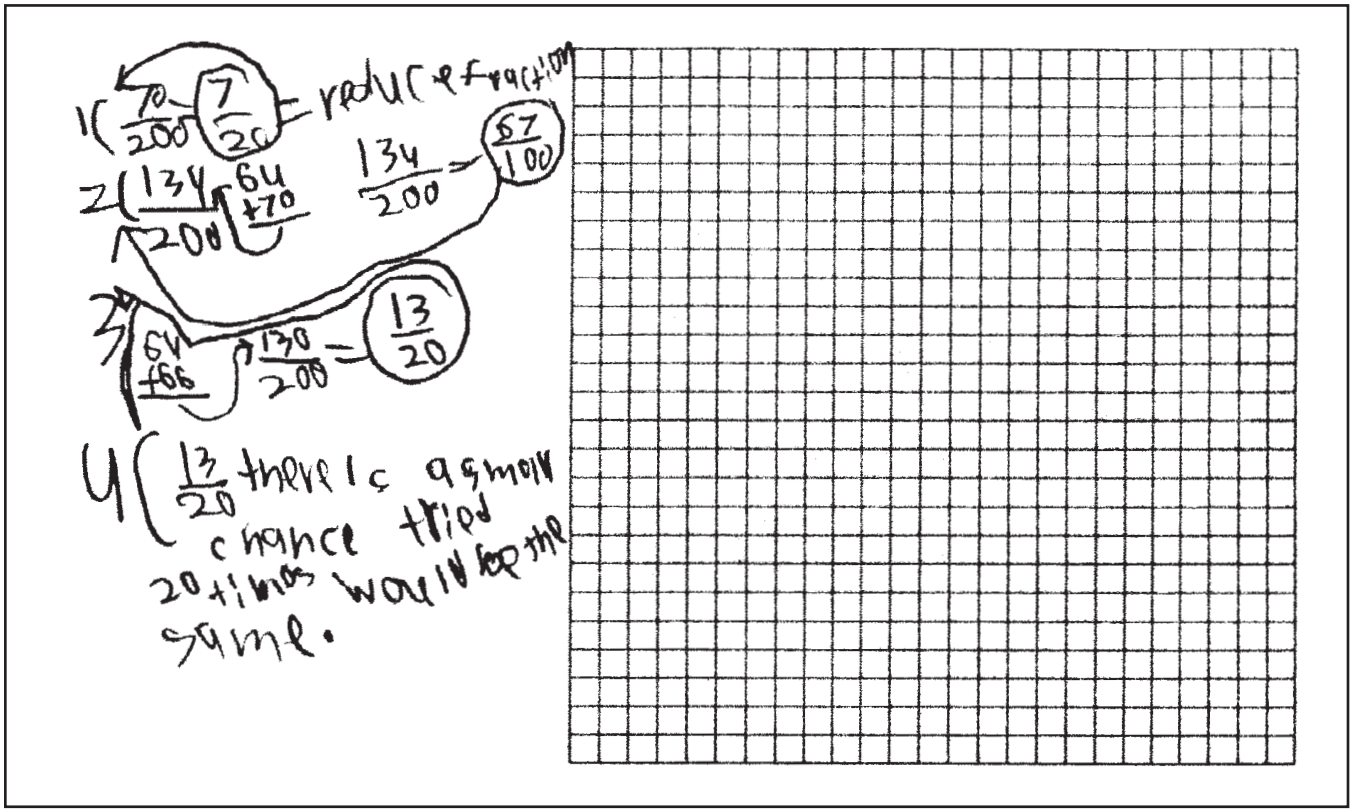
Correct answer:	$\frac{67}{100}$	½
Correct and complete procedure:	64 brown + 70 orange, $\frac{134}{200} = \#$	½

Part 3:

Correct answer:	$\frac{13}{20}$	½
Correct and complete procedure:	64 brown + 66 purple, $\frac{130}{200} = \#$	½

Part 4

Correct answer with correct explanation:	"They are almost the same but $\frac{2}{3}$ is greater." Experimental – $\frac{13}{20}$, Theoretical = $\frac{6}{9} = \frac{2}{3}$	1
TOTAL POINTS:		**4**



SCORE: 3 **Points**

Part 1:

Correct answer:	$\frac{7}{20}$	½
Correct and complete procedure:	$\frac{70}{200} = \#$	½

Part 2:

Correct answer:	$\frac{67}{100}$	½
Correct and complete procedure:	$64 + 70 = 134,\ \frac{134}{200} = \#$	½

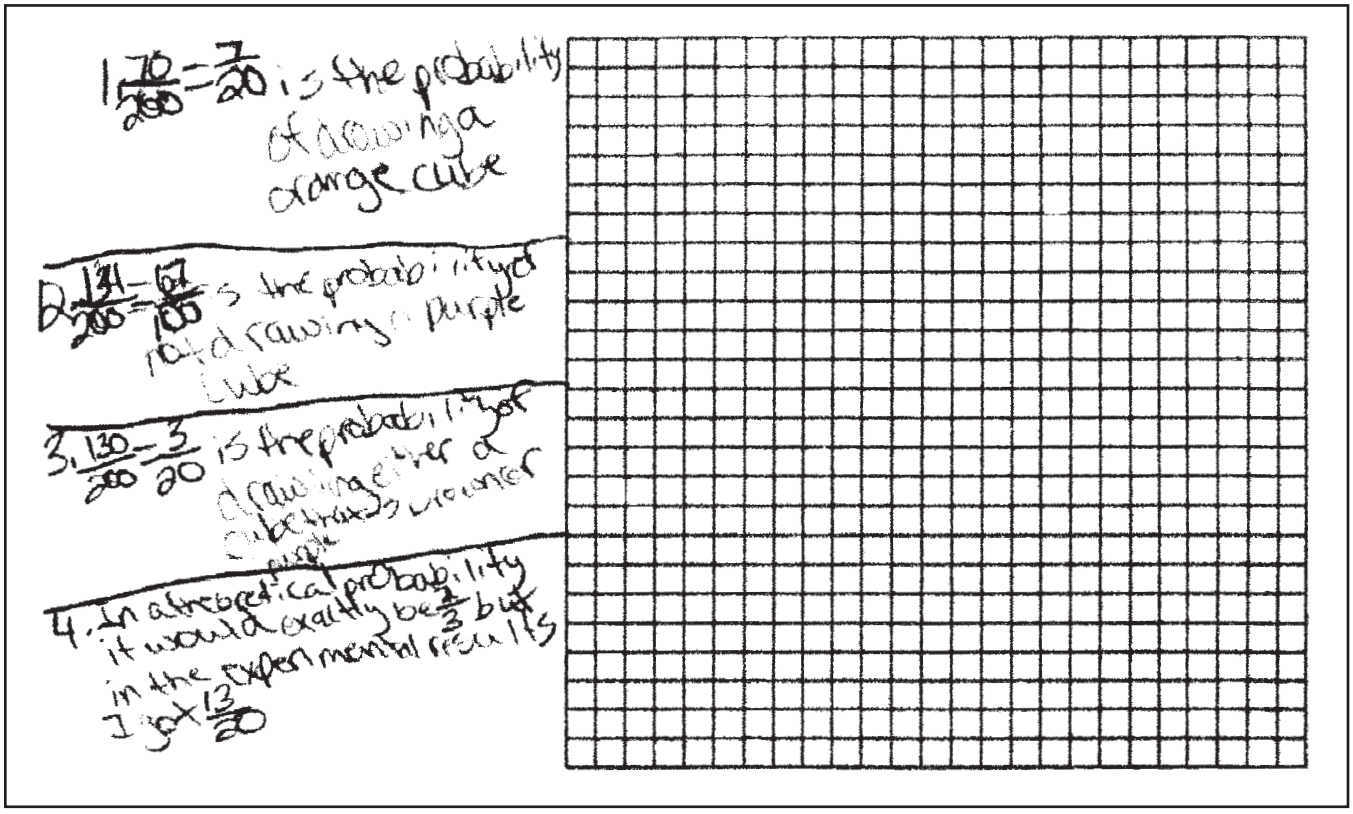
Part 3:

Correct answer:	$\frac{13}{20}$	½
Correct and complete procedure:	$64 + 66 = 130,\ \frac{130}{200} = \#$	½

Part 4

Incorrect answer:	"$\frac{13}{20}$, there is a small chance tried 20 times they would be the same."	–

TOTAL POINTS: **3**



SCORE: 2 **Points**

Part 1:

Correct answer:	$\frac{7}{20}$	½
Correct and complete procedure:	$\frac{70}{200} = \#$	½

Part 2:

Correct answer:	$\frac{67}{100}$	½
Incomplete procedure:	$\frac{134}{200} = \#$	–

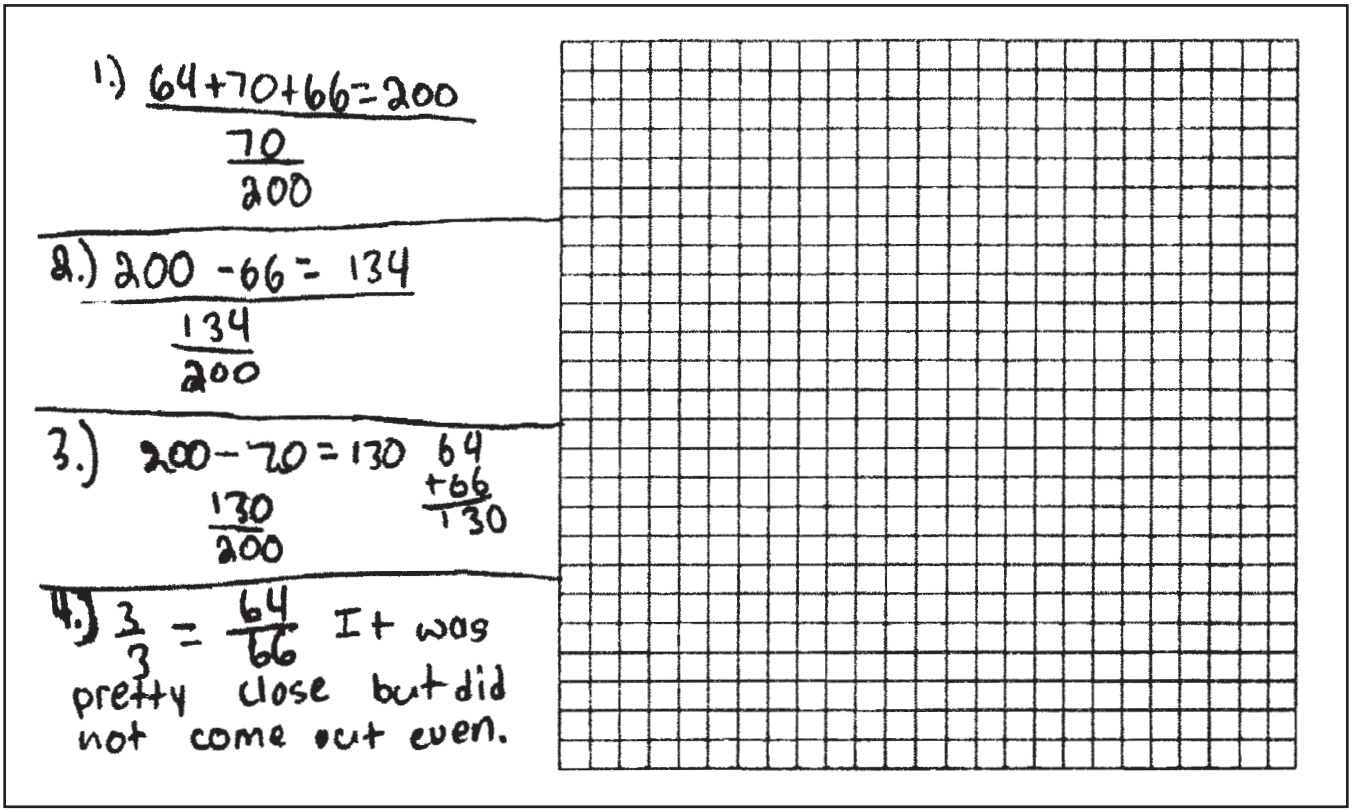
Part 3:

Incorrect answer:	$\frac{3}{20}$ (copy error?)	–
Incomplete procedure:	$\frac{130}{200} = \#$	–

Part 4

Correct procedure with no comparison:	"In a theoretical probability it would exactly be $\frac{2}{3}$ but in the experimental results I got $\frac{13}{20}$"	1

TOTAL POINTS: **2 ½**



SCORE: 1 **Points**

Part 1:

Incorrect answer:	$\frac{70}{200}$ (not simplified)	–
Correct and complete procedure:	$64 + 70 + 66 = 200$, $\frac{70}{200}$	½

Part 2:

Incorrect answer:	$\frac{134}{200}$ (not simplified)	–
Correct and complete procedure:	$200 - 66 = 134$, $\frac{134}{200} = \#$	½

Part 3:

Incorrect answer:	$\frac{130}{200}$ (not simplified)	–
Correct and complete procedure:	$200 - 70 = 130$, $\begin{matrix}64\\+66\\\hline 130\end{matrix}$, $\frac{130}{200} = \#$	½

Part 4

Incorrect comparison:	$\frac{3}{3} = \frac{64}{66}$ "pretty close"	–

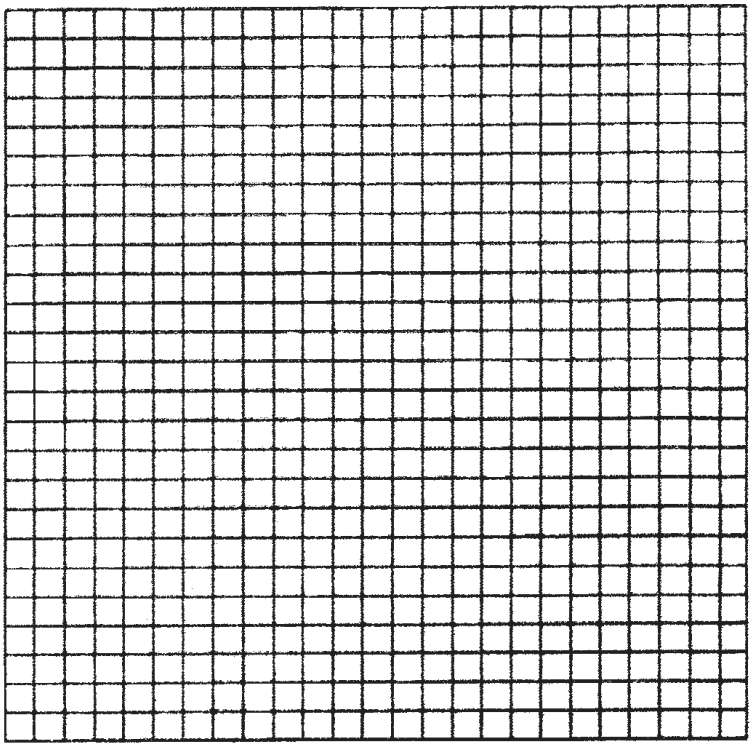
TOTAL POINTS: **1 ½**

1. $\frac{3}{9}=\frac{1}{3}$ The probability of drawing a orange cube is $\frac{1}{3}$.

2. $\frac{6}{9}=\frac{2}{3}$ The probability of drawing a non-purple is $\frac{2}{3}$.

3. $\frac{6}{9}=\frac{2}{3}$ The probability of drawing a non-purple is $\frac{2}{3}$.

4. $\frac{2}{3}\ \frac{2}{3}=0$ The theoretical probability of prob 3, is that both prob 2 & 3 are equal to each other.



SCORE: 0 **Points**

Part 1:

Incorrect answer: $\frac{1}{3}$ –

Incorrect procedure: $\frac{3}{9} = \#$ –

Part 2:

Incorrect answer: $\frac{2}{3}$ –

Incorrect procedure: $\frac{6}{9} = \#$ –

Part 3:

Incorrect answer: $\frac{2}{3}$ –

Incomplete procedure: $\frac{6}{9} = \#$ –

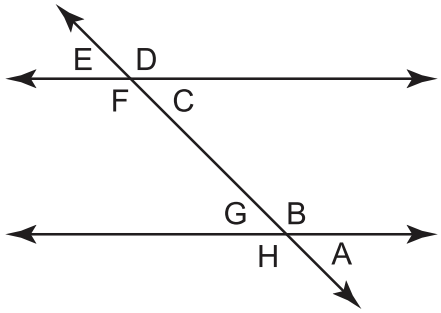
Part 4

Incorrect comparison: "prob. 2 & 3 are equal to each other" –

TOTAL POINTS: **0**

Mathematics Item C—2007 Benchmark Grade 7

The figure below shows two parallel lines cut by a transversal.



1. If angle H measures 135 degrees, what is the measure of angle A? Show your work.

2. List all angles in the figure that are equal to angle A.

3. List three **different** pairs of angles in the figure that are supplementary angles.

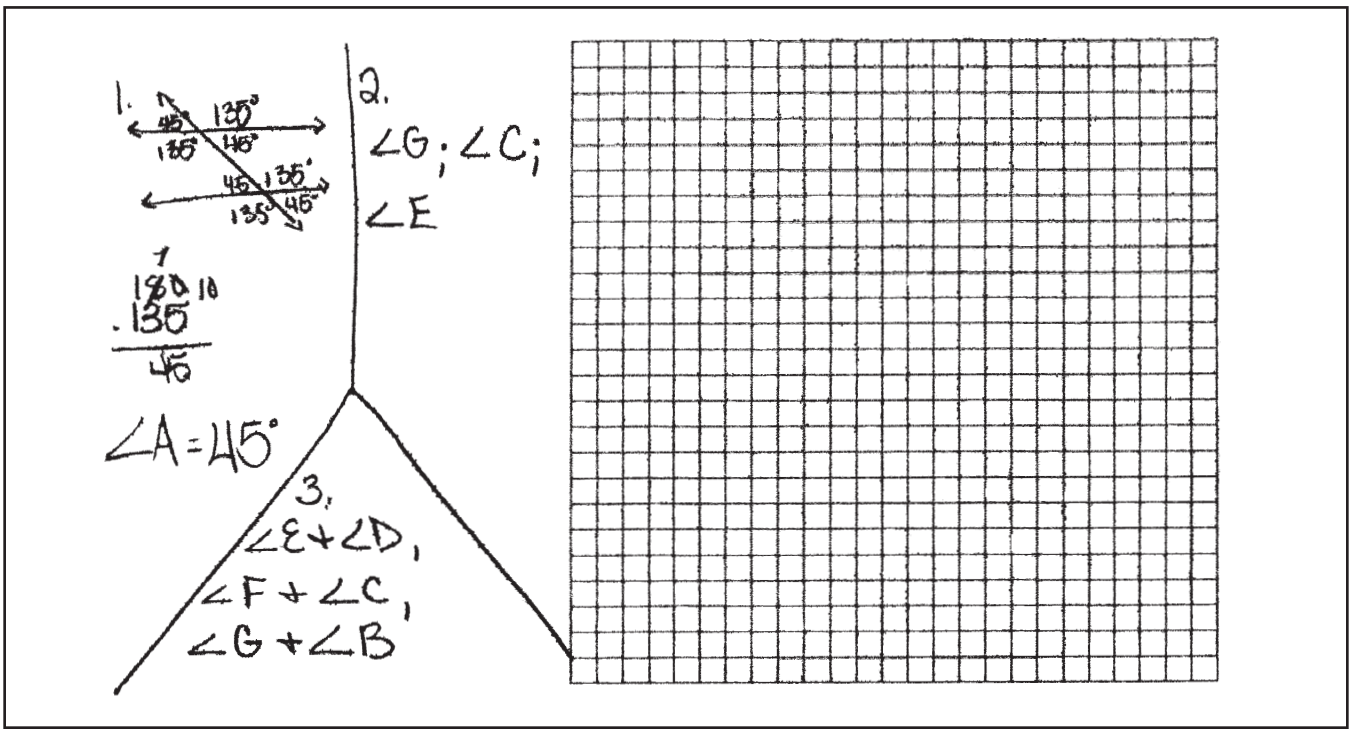
BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

Mathematics Item C Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The correct label of " ° " or "degrees" is used in Part 1.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown. Ex: Two correct pairs of supplementary angles and no incorrect angles in Part 3. Ex: Two $\angle$'s $\cong \angle A$ with no incorrect angles in Part 2.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**2 points possible** 1 point: **Correct answer: 45 (degrees).** Do not give credit for 45º if an incorrect procedure is used. AND 1 point: **Correct procedure shown and/or explained.** Work may contain a calculation or copy error. Give credit for the following or equivalent: • 180 – 135 = #, or • "I subtracted 135 from 180 to get my answer," or • "I know it's 45 degrees because they are supplementary," or • "They are a linear pair."
2	**1 point possible** 1 point: **Correct answer: *G*, *C*, and *E*** Note: All 3 must be listed with no incorrect angles included.
3	**1 point possible** 1 point: **Correct answer: Any 3 pairs shown below with no incorrect pairs included.** *A* & *B*, *A* & *H*, *B* & *G*, *G* & *H*, *C* & *D*, *C* & *F*, *E* & *F*, *E* & *D*, *G* & *F*, *G* & *D*, *B* & *C*, *B* & *E*, *A* & *F*, *A* & *D*, *H* & *C*, *H* & *E*



SCORE: 4 **Points**

Part 1:

Correct answer:	45°	1
Correct and complete procedure:	180 – 135 = #	1

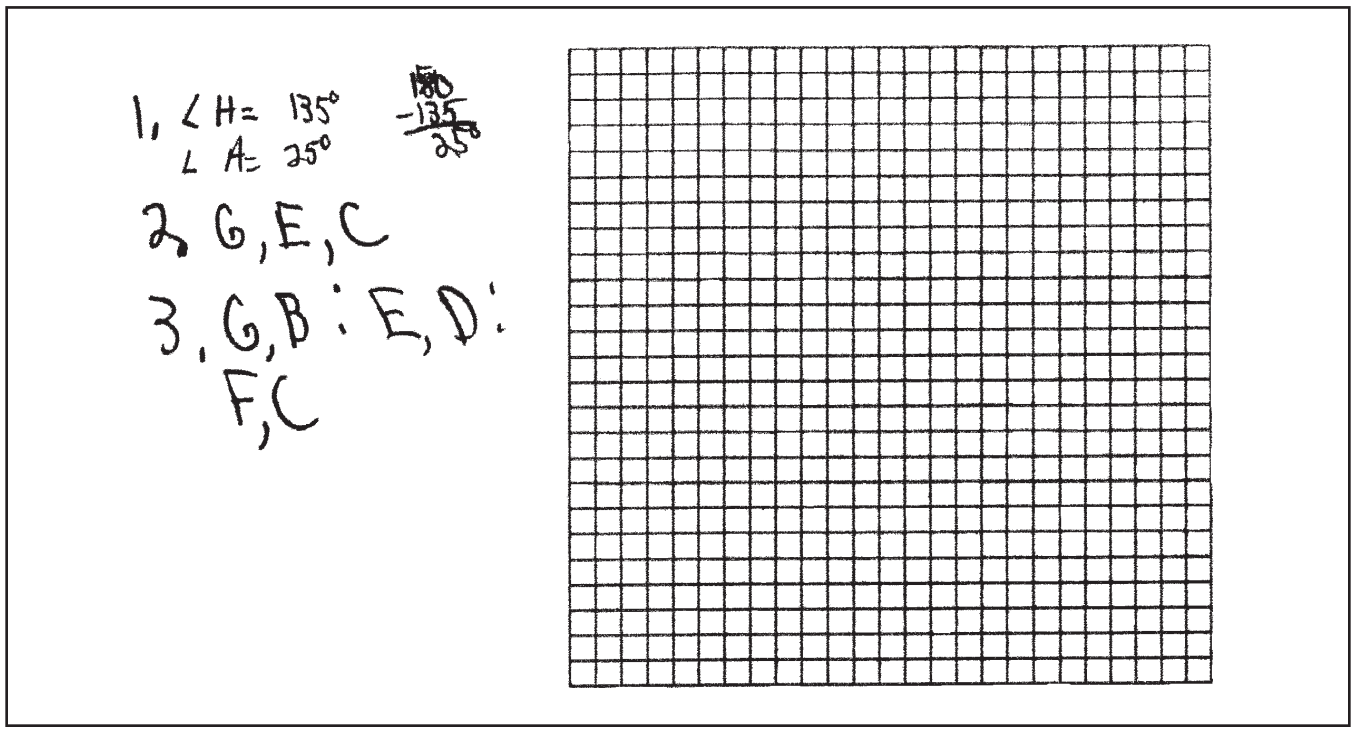
Part 2:

Correct answers:	$\angle G, \angle C, \angle E$	1

Part 3

Correct answers:	$\angle E$ & $\angle D$, $\angle F$ & $\angle C$, $\angle G$ & $\angle B$	1

TOTAL POINTS: **4**



SCORE: 3 **Points**

Part 1:

Incorrect answer due to calculation error:	25°	–
Correct and complete procedure:	180 – 135 = 25 (calculation error)	1

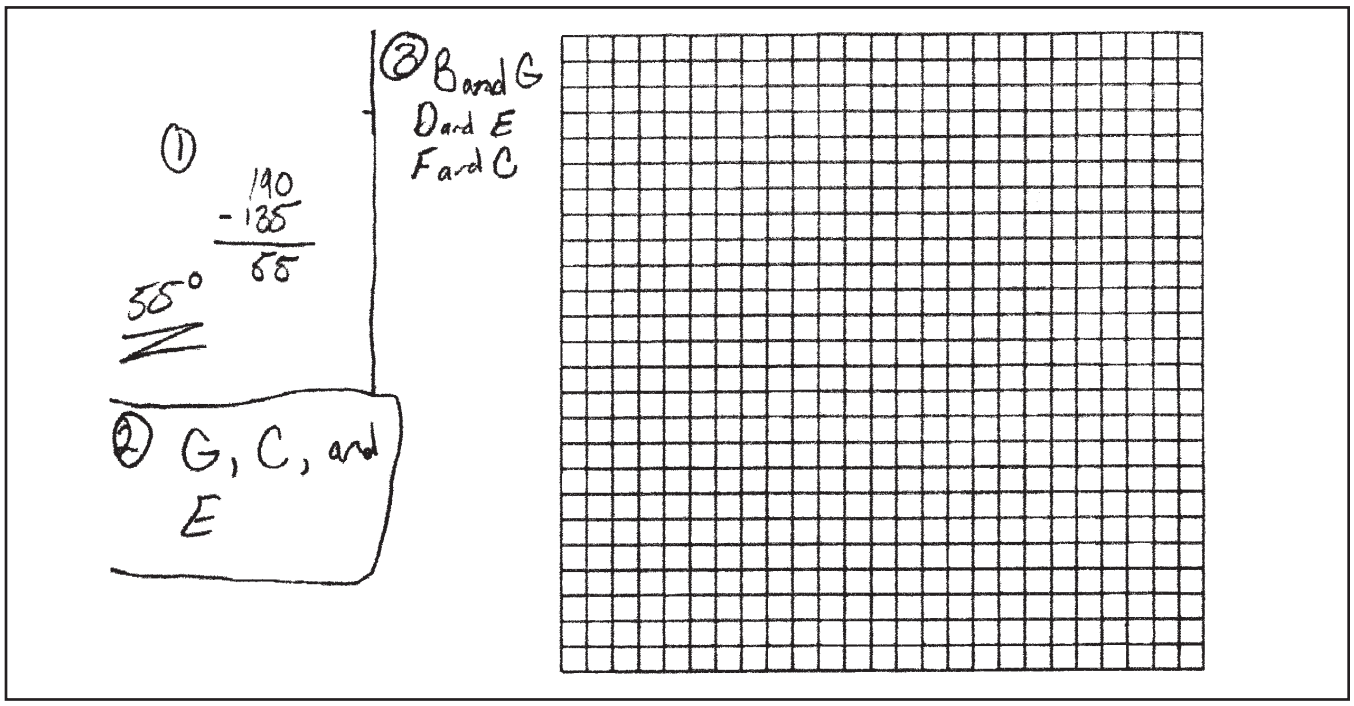
Part 2:

Correct answers:	*G*, *E*, *C*	1

Part 3

Correct answers:	*G*, *B* : *E*, *D* : *F*, *C*	1

TOTAL POINTS: **3**



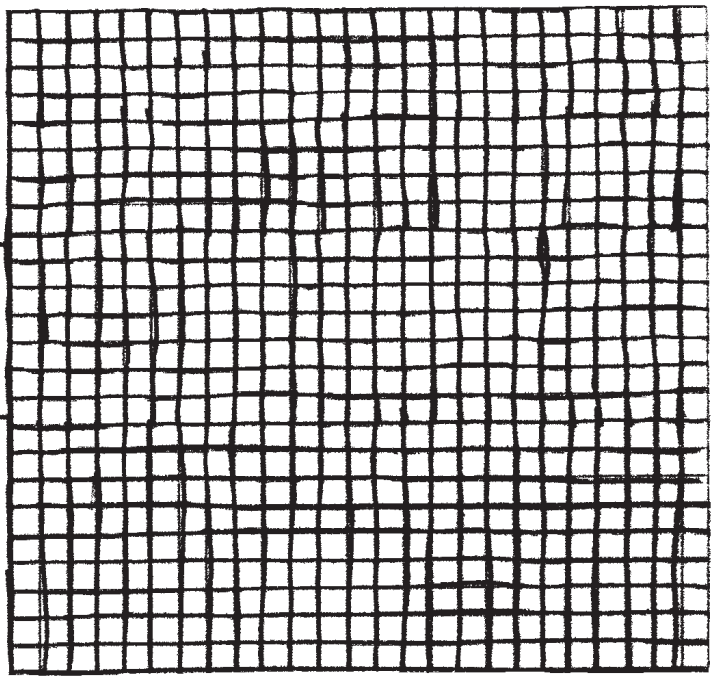
SCORE: 2		**Points**
Part 1:		
Incorrect answer:	55°	–
Incorrect procedure:	190 – 135 = #	–
Part 2:		
Correct answers:	*G*, *C*, and *E*	1
Part 3		
Correct answers:	*B* and *G*, *D* and *E*, *F* and *C*	1
TOTAL POINTS:		**2**

1. Angle A would be 45 degrees if H measures 135

B
135
−90
45

2. The angles that angle A is equal to is angle C and E, G

3. The three different Pairs of angles that are supplementary is angles D, C and B



SCORE: 1 **Points**

Part 1:

Correct answer but incorrect procedure: $135 - 90 = 45$ –

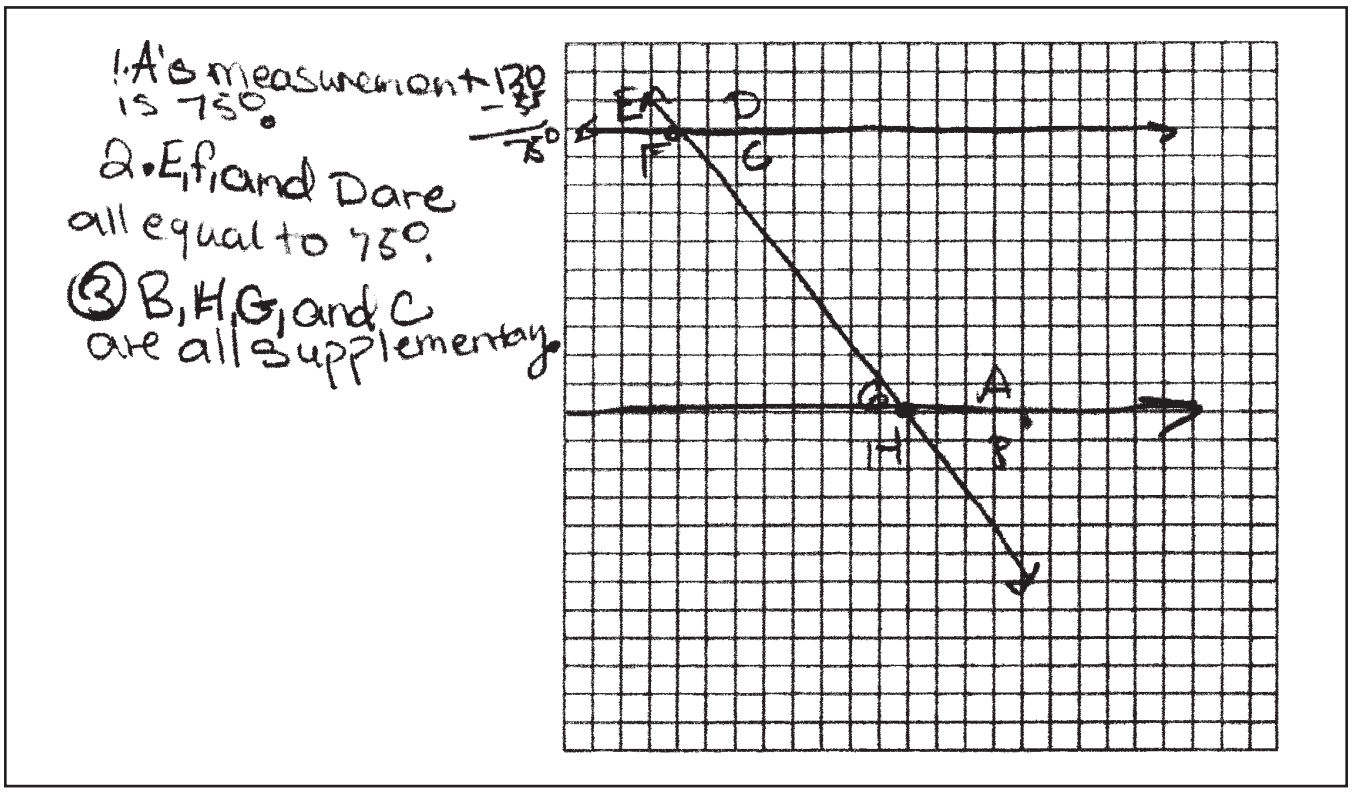
Part 2:

Correct answers: *C*, *E*, and *G* 1

Part 3

Incorrect answers: *D*, *C*, and *B* –

TOTAL POINTS: **1**



SCORE: 0 **Points**

Part 1:

Incorrect answer:	75°	–
Incorrect procedure:	130 – 55 = #	–

Part 2:

1 correct answer:	*E*	–
2 incorrect answers:	*F* and *D*	

Part 3

Incorrect answers:	*B*, *H*, *G*, and *C*	–

TOTAL POINTS: **0**

Mathematics Item D—2007 Benchmark Grade 7

Tai rode the bus to school. The bus left his house at 7:20 A.M. and arrived at school at 8:25 A.M. Tai's mother picked him up after school at 3:35 P.M., and they arrived at home at 3:50 P.M.

1. How long was Tai on the bus? Show your work.

2. What is the total time Tai spent traveling to and from school? Show your work.

3. Predict whether Tai will ride the bus or go with his mother if he wants to save time traveling to or from school. How much time will he save? Explain your answer.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

Mathematics Item D Scoring Rubric—2007 Benchmark Grade 7

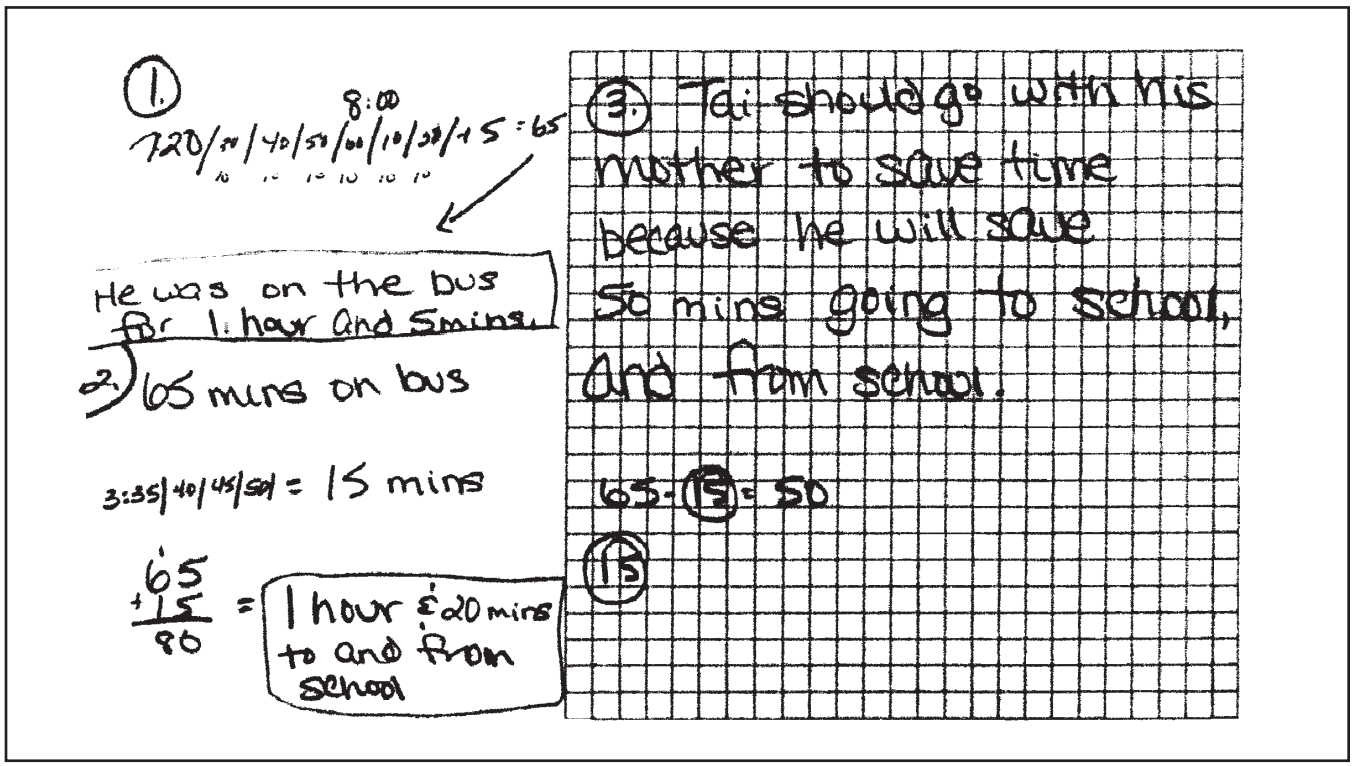
SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The correct labels are used in all parts.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**1 point possible** ½ point: **Correct answer: 1 hour 5 minutes, or 65 minutes.** AND ½ point: **Correct and complete procedure shown or explained.** Work may contain a calculation or copy error but not a conversion error. Give credit for the following or equivalent: • 8:25 – 7:20 = #, or • "I subtracted 7:20 from 8:25," or • "7:20 to 8:20 is one hour, and 8:20 to 8:25 is 5 minutes, so my answer is #."
2	**2 points possible** 1 point: **Correct answer: 1 hour 20 minutes, or 80 minutes, or correct answer based on incorrect answer given in Part 1.** AND 1 point: **Correct and complete procedure shown or explained.** Work may contain a calculation or copy error but not a conversion error. Give credit for the following or equivalent: • "3:50 – 3:35 = 15 minutes 1 hour 5 minutes + 15 minutes = 1 hour 20 minutes" (or "65 minutes + 15 minutes = 80 minutes), or • "From 3:35 to 3:50 is 15 minutes. Add that to 65 minutes to get 80 minutes," or • "I subtracted 3:35 from 3:50 and got 15 minutes. I added that to 1 hour and 5 minutes to get my answer." OR ½ point: **Incomplete but not incorrect procedure.** Ex: 15 minutes + 65 minutes = 80 minutes. No calculation or discussion of the 15 minutes.

Solution and Scoring (continued)

Part	Points
3	**1 point possible** 1 point: **Correct answer: "Ride with his mother," or correct answer based on incorrect answer(s) in Part 1 and/or Part 2.** AND **Correct and complete work and/or explanation.** Give credit for the following or equivalent: • "He will save 50 minutes if he rides with his mother because 65 minutes – 15 minutes = 50 minutes," or • "Because his mother takes only 15 minutes while the bus takes over an hour. He'll save 50 minutes." Note: Some students consider the round trip to and from school. In that case, the time for the bus would be 2 hours 10 minutes and the time for his mom would be 30 minutes. The difference is 1 hour 40 minutes or 100 minutes. OR ½ point: **Give credit for the following or equivalent:** • Work is correct and complete but no choice is made. Ex: 65 minutes – 15 minutes = 50 minutes, or • Correct answer based on incomplete, but not incorrect, procedure. Ex: "He'll ride with his mom because he'll save 50 minutes." (No calculation or discussion of the 50 minutes.) Ex: "He'll ride with his mother because 15 minutes is less than the bus's time." (Does not give time saved.) Note: No credit for correct answer based on a procedural error, if there is no valid reason, or if there is insufficient reason. Ex: "He'll ride with his mom because 1:05 – :15 = 90 minutes. Ex: "He should ride with his mother." Ex: "Go with mom because it's faster."



SCORE: 4 **Points**

Part 1:

Correct answer:	1 hour and 5 mins	½
Correct and complete procedure:	Shows six 10-minute intervals from 7:20 to 8:20 and adds 5 to get 65 minutes.	½

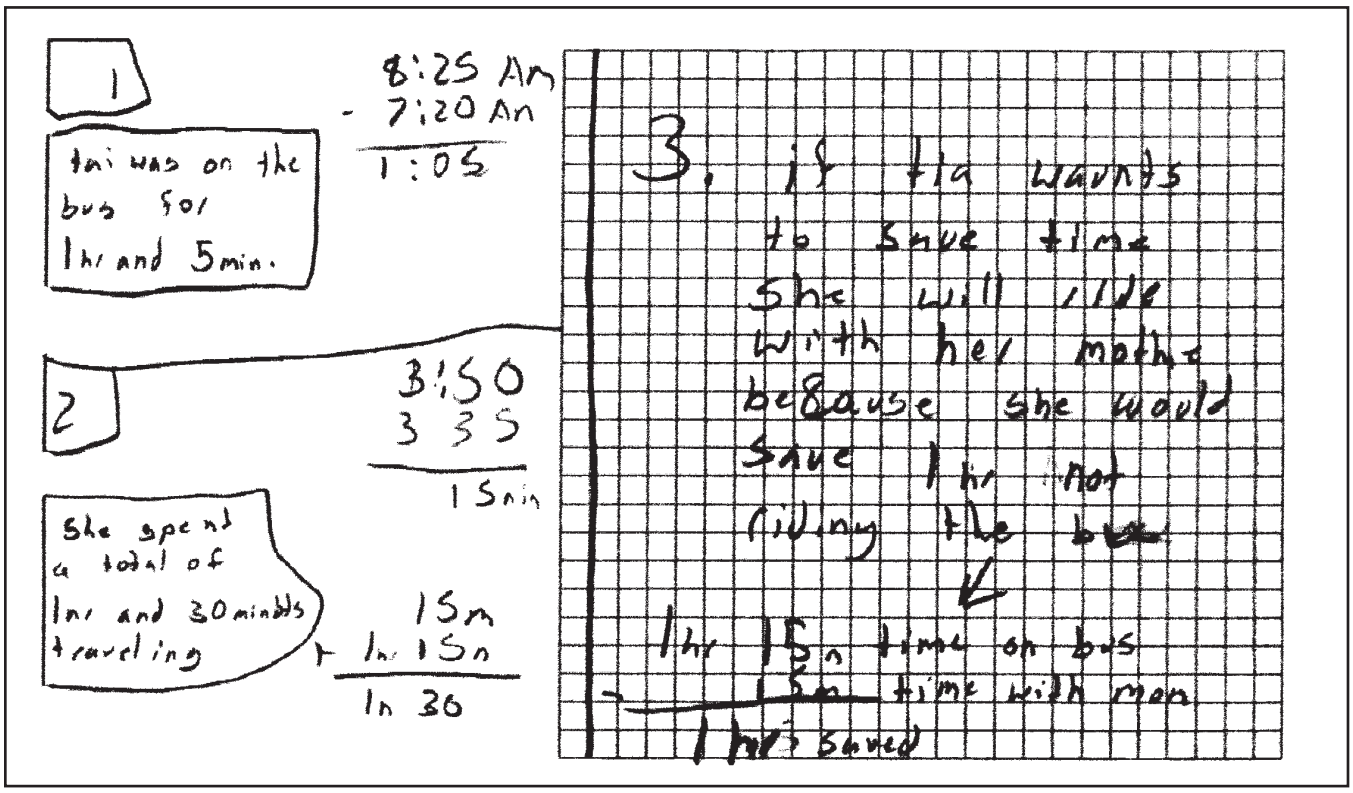
Part 2:

Correct answer:	1 hour and 20 mins	1
Correct and complete procedure:	Shows three 5-minute intervals equaling 15 minutes. 65 + 15 = 80	1

Part 3

Correct answer:	"Tai should go with his mother"	1
Correct and complete explanation:	"to save time because he will save 50 minutes" 65 – 15 = 50	

TOTAL POINTS: **4**



SCORE: 3 **Points**

Part 1:

Correct answer:	1 hr and 5 min.	½
Correct and complete procedure:	8:25 am – 7:20 am = 1:05	½

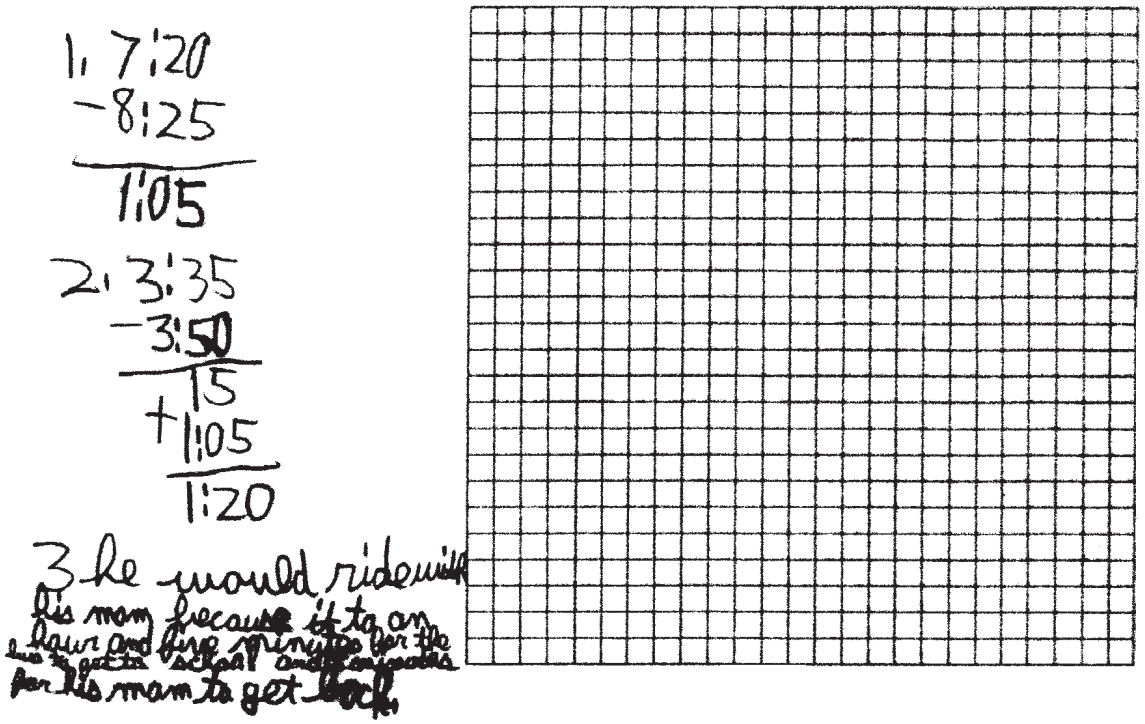
Part 2:

Incorrect answer due to copy error:	1 hr and 30 minutes	–
Correct and complete procedure:	3:50 – 3:35 = 15; 15 m + 1 hr 15 m (copy error) = 1 h 30	1

Part 3

Correct answer:	"ride with her mother"	1
Correct and complete explanation based on incorrect Part 2:	"because she would save 1 hr" 1 hr 15 m – 15 m = 1 hr	

TOTAL POINTS: **3**



SCORE: 2 **Points**

Part 1:

Correct answer:	1:05	½
Incorrect procedure (reversed):	7:20 – 8:25 = #	–

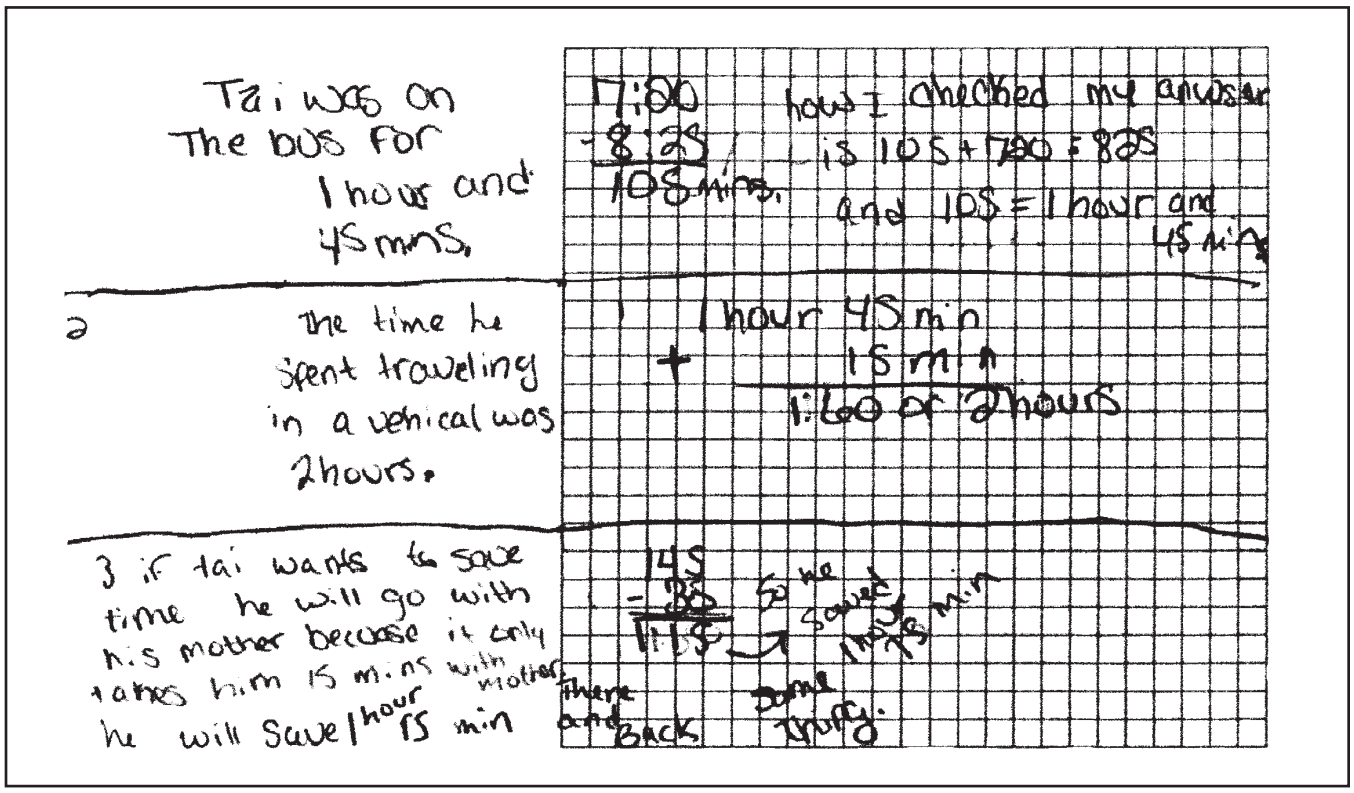
Part 2:

Correct answer:	1:20	1
Incorrect procedure:	3:35 – 3:50 (reversed) = 15 + 1:05 = #	–

Part 3

Correct answer:	"he would ride with his mom"	½
Incomplete explanation:	"because it to an hour and five minutes for the bus…fifteen minutes for his mom" Does not discuss amount of time saved.	

TOTAL POINTS: **2**



SCORE: 1 **Points**

Part 1:

Incorrect answer:	1 hour and 45 mins.	–
Incorrect procedure (conversion error and reversed procedure):	7:20 – 8:25 = 105 mins.	–

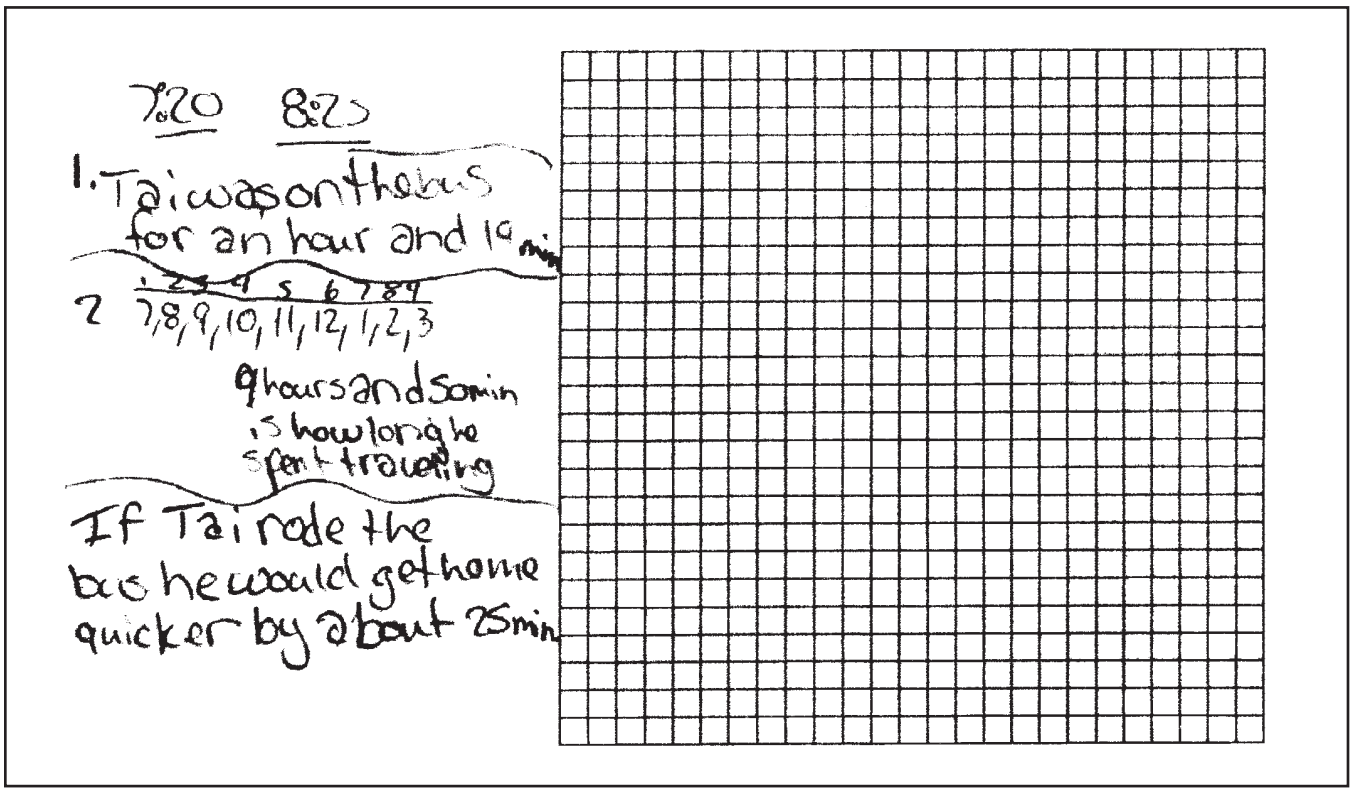
Part 2:

Correct answer (based on Part 1):	2 hours	1
Incomplete procedure:	1 hour 45 min + 15 min 1:60 or 2 hours	½

Part 3

Correct answer with invalid reasoning:	"go with his mother" Save 1 hour 15 min. (Uses round trip time for mother and one-way time for bus.)	–

TOTAL POINTS: **1 ½**



SCORE: 0 **Points**

Part 1:

Incorrect answer:	1 hour 19 min	–
Procedure missing:		–

Part 2:

Incorrect answer:	9 hours 50 min	–
Incorrect procedure:	Counts hours (incorrectly) from 7 (am) to 3 (pm).	–

Part 3

Incorrect answer:	"If Tai rode the bus he would get home quicker by about 25 min."	–

TOTAL POINTS: **0**

Mathematics Item E—2007 Benchmark Grade 7

Nellie has $87.00 in her checking account. She wrote a check for $95.38. The bank charged her a $20.00 insufficient funds fee for not having enough money in her account.

1. How much more was the amount of the check than the balance in Nellie's account? Show your work.

2. Write an equation to show how much Nellie would need to deposit in her account to cover her check and the insufficient funds fee. Let x = amount deposited. Show your work.

3. Solve the equation found in Part 2. Show your work.

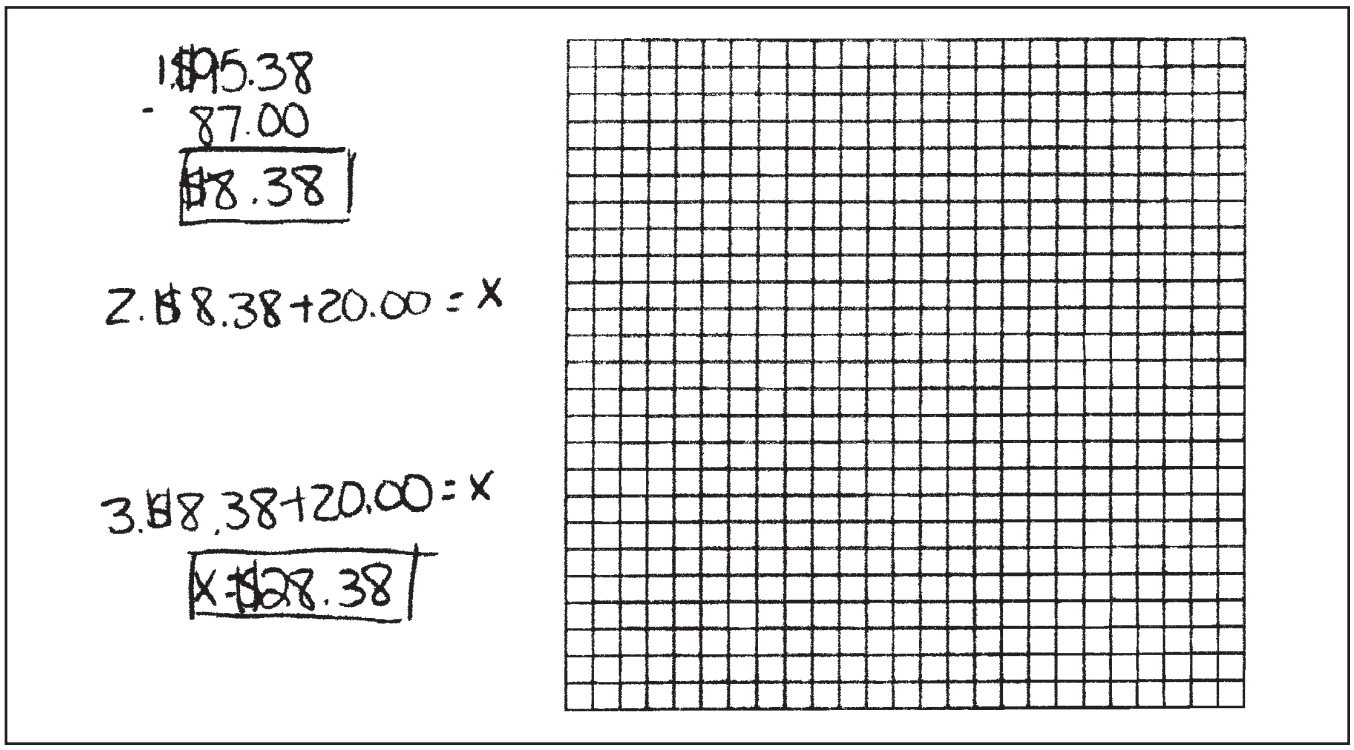
BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.

Mathematics Item E Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The correct label of "$" is used.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**2 points possible** 1 point: **Correct answer: ($) 8.38** Do not give credit if incorrect procedure is used. AND 1 point: **Correct procedure shown and/or explained.** Work may contain a calculation or copy error. Give credit for the following or equivalent: • $95.38 - 87.00 = \#$, or • "I subtracted 87 from 95.38 to get my answer."
2	**1 point possible** 1 point: **Correct equation.** May be based on an incorrect answer in Part 1. Give credit for the following or equivalent: • $20.00 + 8.38 = x$, or • (Answer to Part 1) + 20 = x, or • $x = 95.38 - 87.00 + 20.00$, • $x = 28.38$.
3	**1 point possible** 1 point: **Correct solution of equation.** May be based on an incorrect equation given in Part 2. Give credit for the following or equivalent: • x = ($) 28.38, or • Correct answer ($28.38) using any correct procedure with or without credit in Part 2.



SCORE: 4 **Points**

Part 1:

Correct answer:	$8.38	1
Correct and complete procedure:	$95.38 – 87.00 = x	1

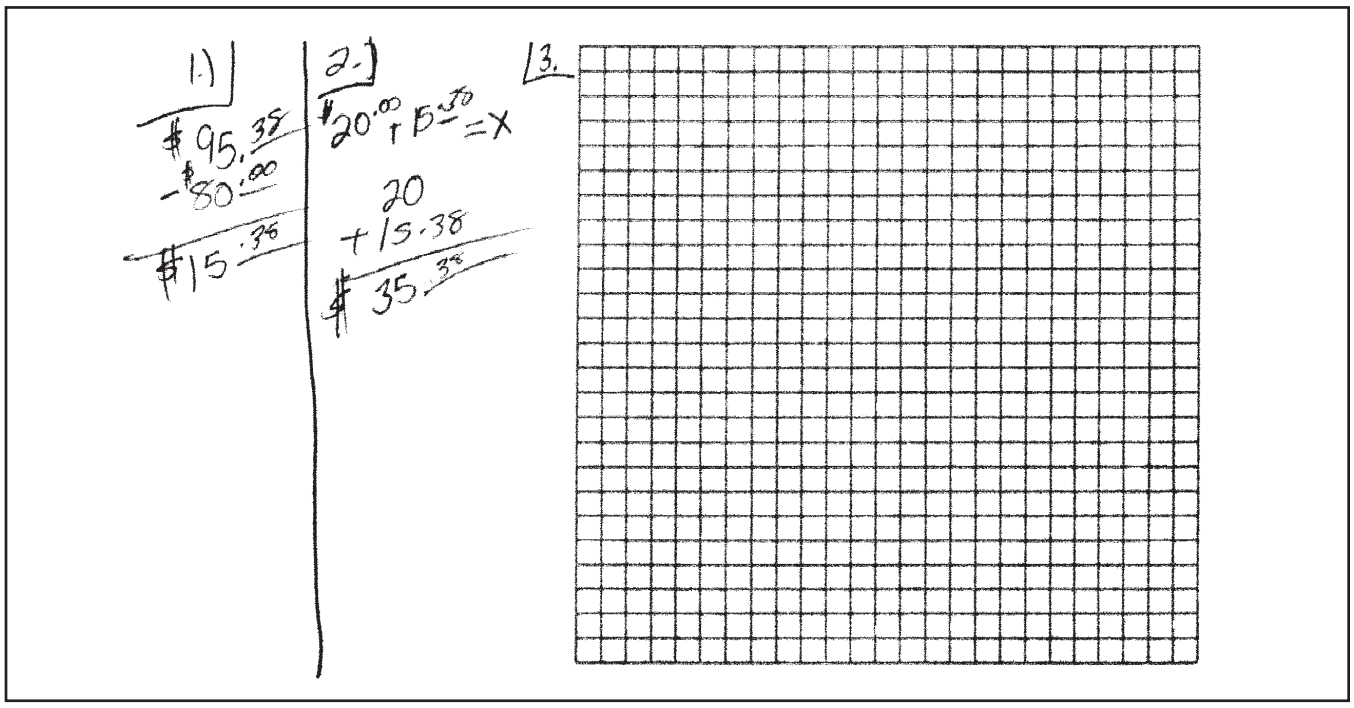
Part 2:

Correct equation:	$8.38 + 20.00 = x	1

Part 3

Correct answer:	$28.38	1

TOTAL POINTS: **4**



SCORE: 3 **Points**

Part 1:

Incorrect answer due to copy error:	$15.38	–
Correct and complete procedure:	$95.38 – 80.00 (copy error) = #	1

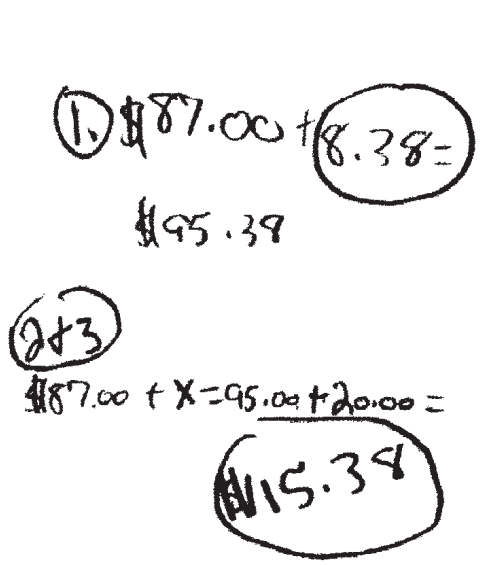
Part 2:

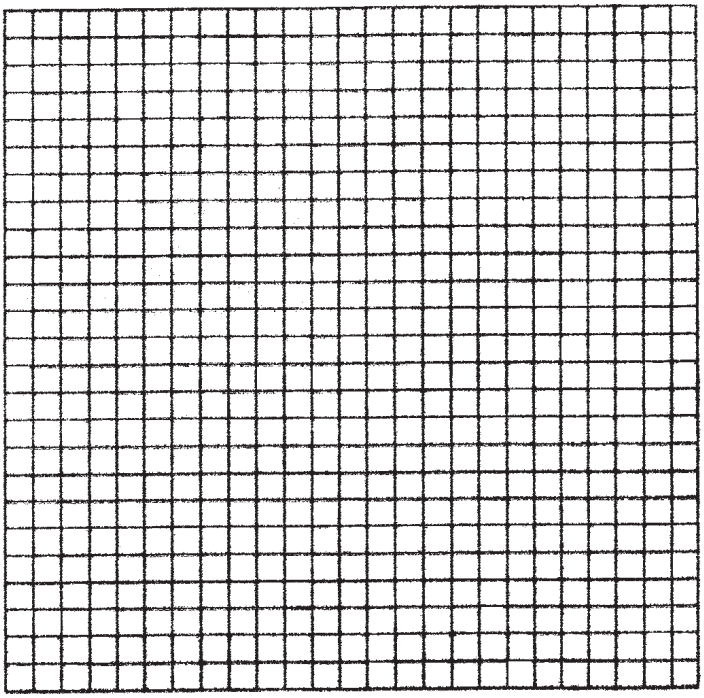
Correct equation based on Part 1:	$20.00 + 15.38 = *x*	1

Part 3

Correct answer based on Part 1:	$35.38	1

TOTAL POINTS: **3**





SCORE: 2 **Points**

Part 1:

Correct answer:	8.38	1
Correct and complete procedure:	$87.00 + 8.38 = $95.38 (guess and check)	1

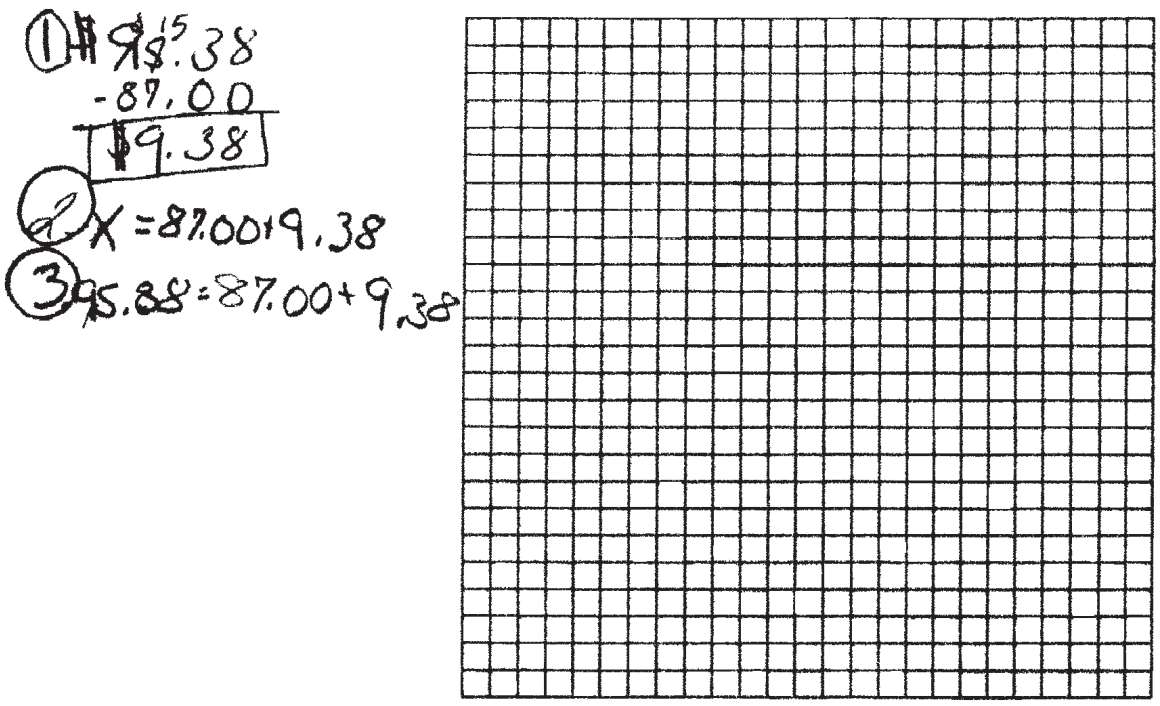
Part 2:

Incorrect equation:	$87.00 + x = 95.00 + 20.00	–

Part 3

Incorrect answer:	$115.38	–

TOTAL POINTS: **2**



SCORE: 1 **Points**

Part 1:

Incorrect answer due to calculation error:	$9.38	–
Correct and complete procedure:	$95.38 – 87.00 = #	1

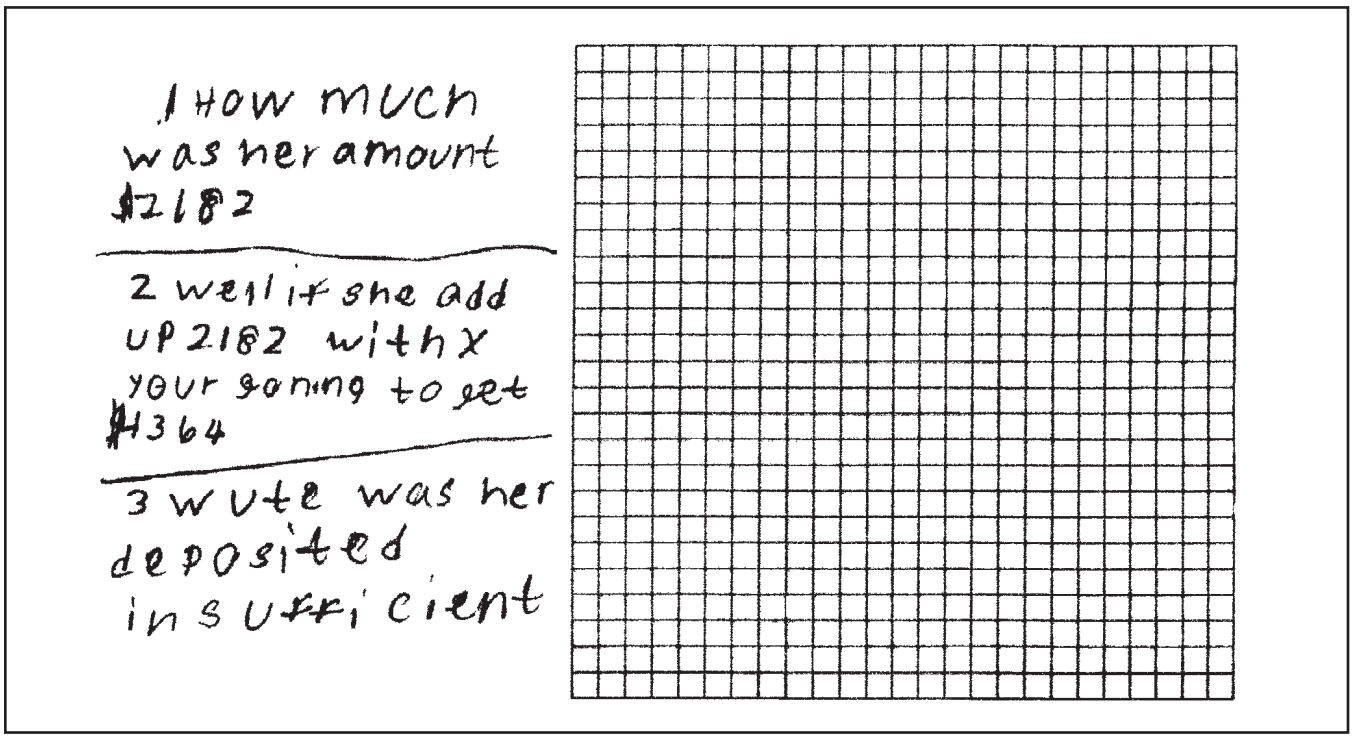
Part 2:

Incorrect equation:	$x = 87.00 + 9.38$	–

Part 3

Incorrect answer due to calculation error:	95.88	–

TOTAL POINTS: **1**



SCORE: 0 **Points**

Part 1:

Incorrect answer:	$2182	–
Procedure missing:		–

Part 2:

Incorrect (missing) equation:	"add up 2182 with *x*"	–

Part 3

Answer missing:	–

TOTAL POINTS: **0**

READING RESPONSES

This COLD House

by Elizabeth Gilbert

My father grew up in northern New York State. My mother grew up in northern Minnesota. In my father's town, they used to say that there were only three seasons: July, August and winter. In my mother's town, winter blizzards were so savage that cows froze to death. Which is to say, my parents are tough people. When they married, they settled in northern Connecticut, a location that must have seemed positively tropical to them after their upbringings.

In 1973, they bought a shaggy, 150-year-old farmhouse. My grandmother wept the day we moved in.

"How could you?" she accused my father. "How could you bring your beautiful wife and children into this house?"

Much of the roof was missing. The water supply was sporadic, there were possums living in the basement, the grass was taller than I was. Therefore, one of my father's first acts of home improvement was to remove all the radiators from the upstairs bedrooms. This was to save on heating costs.

Four years later, my big sister, Catherine, would win a local essay contest with the topic "How My Family Saves Energy." Catherine, age 11, would write confidently, "We hope to become a *completely* energy conservative family! During our first winter here, we spent more than 336 dollars on 828 gallons of fuel oil. This last winter, we spent *nothing* on fuel oil! The bedrooms are not heated, and sometimes we get below zero. Surprisingly, they are quite comfortable."

6 The bedrooms were not, actually, quite comfortable. Clothes stored in my bedroom froze crunchy. Frost collected in the window corners like sawdust. Getting out of bed in the morning was like stepping into a meat locker. People couldn't believe how we lived. People made jokes about our cold house, about our scrappy little farm and our rough life. We made no sense to people.

But then, one January day when I was about 7 years old, it started to rain.

It must have rained for a week. We lived on a road called South Plains—a swampy stretch of lowlands considerably below the hilly center of town. The Bantam River (a sweet little thing) passed right by us. It might seem grand to call South Plains a river valley, but that's exactly what it was, as we all discovered that January when it wouldn't stop raining.

9 The sweet little Bantam River rose. She outgrew her banks, she outgrew her bridges. She flooded the entirety of South Plains. Our neighborhood became a long lake. At last, late one afternoon, the rain

stopped. The skies cleared, the sun set. That night, the temperature dropped below freezing. And so it happened that our neighborhood had become a vast acreage of sterling ice. Pipes broke, power was lost. South Plains had no heat! South Plains had no hot water!

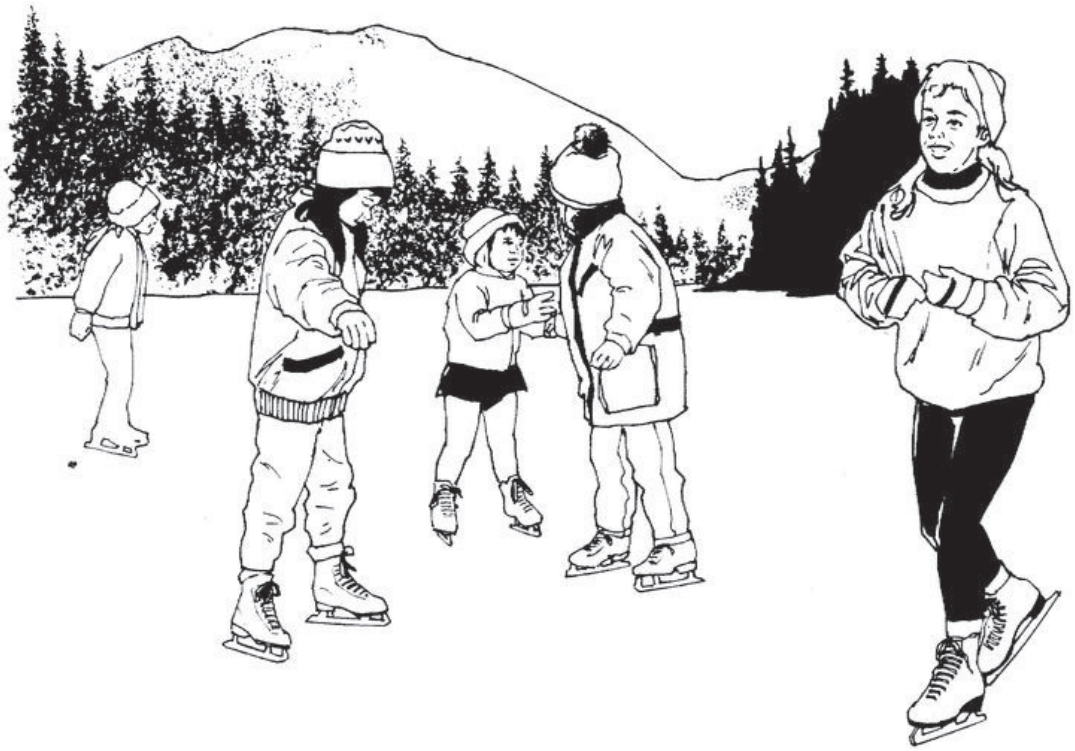
Well. In our house, at least, we did not panic.

My parents dressed us warmly. We put on skates. As a family, we skated down our driveway and over to the horse stables across the highway. We skated through the pastures and skated over the dirt roads and skated easily over the meadows. There was no reason to stop skating, since the ice did not stop. And so we skated right into the woods.

The woods had also been flooded with water, which was now fantastic ice. The ice was shimmering black in some places and other places was clear and magnifying as a lens. Rain had frozen on the trees, sealing them up as if they were glassed. We skated on and on. I could see the figures of my family, glancing quick and smooth around all the trees and branches.

The cold snap did not lift for a week. Every day we skated through the forest. Certainly nobody was in those woods with us. Which is a pity, because people should have seen us then. We made a very elegant sight. Like a ballet. This memory is so thrilling to me that it reads to me like myth sometimes. *Did we really do that?*

14 Still, I absolutely do remember what it was like skating back toward our house. The other houses on our street looked so stricken that week. The other houses looked like slapped faces. But not our house, not that week. The insulated walls, the wood smoke, the little barn full of chickens and hay and warm goats—all this gave out a look of practical and assured preparedness. For once, you could see that very clearly about our house, particularly as you gazed up to it on skates. Our house seemed to bend the very cold and glinting air around it, like a small cloud of heat.



Reading Item A—2007 Benchmark Grade 7

A. In paragraph 14, the author uses the phrase "assured preparedness" to describe the house. Based on the passage, explain what this phrase means. Tell why this is an appropriate description of the house, using two details from the passage to support your response.

Reading Item A Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The response explains what the author means when she describes the look of the house as "assured preparedness" AND explains why the description is appropriate. The response uses two details from the passage to support the explanation.
3	The response explains what the author means when she describes the look of the house as "assured preparedness" OR explains why the description is appropriate. The response uses two details from the passage to support the explanation.
2	The response explains what the author means when she describes the look of the house as "assured preparedness" AND explains why the description is appropriate. **OR** The response explains what the author means when she describes the look of the house as "assured preparedness" OR explains why the description is appropriate AND uses one detail from the passage to support the explanation. **OR** The response provides two details from the passage to support some aspect of the question but no explanation is given.
1	The response explains what the author means when she describes the look of the house as "assured preparedness." **OR** The response explains why the description is appropriate. **OR** The response provides one detail from the passage to support some aspect of the question.
0	The response is totally incorrect or irrelevant. There is no evidence that the student understands the task, or the response may be off-topic.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

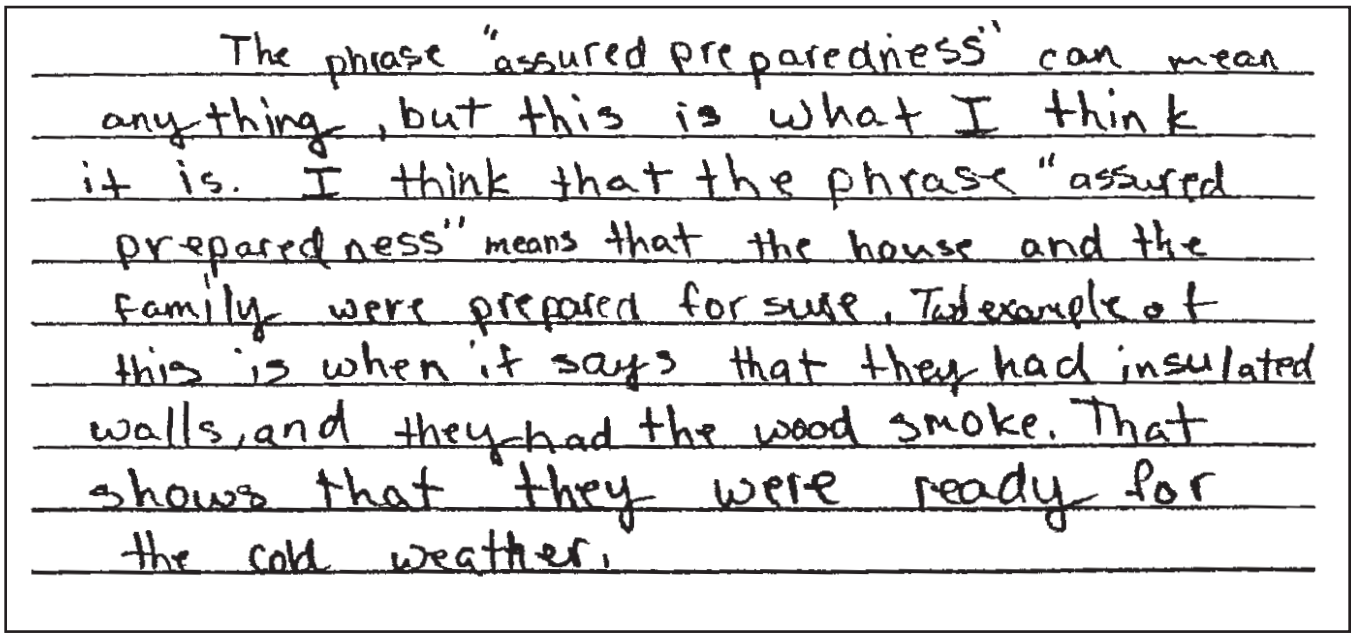
Score Point: 4

The student thoroughly explains what the phrase "assured preparedness" means ("they were prepared for the worst"). The response indicates why this is an appropriate description of the house ("because the family didn't have heat and that cold weather was nothing to them. It was also a good description for the house. The passage says our house seemed to bend the very cold and glinting air around it, like a small cloud of heat") using accurate and relevant details from the passage in support ("It also stated that their insulated walls, wood smoke, little barn full of chickens and hay and warm goats gave the look of practical and assured preparedness"). The response demonstrates a thorough understanding of the passage.

In this passage the phrase "assured preparedness" means that they were prepared for the worst. It is an appropriate description because the family didn't have heat and that cold weather was nothing to them. It was also a good description for the house. The passage says our house seemed to bend the very cold and glinting air around it, like a small cloud of heat. It also stated that their insulated walls, wood smoke, little barn full of chickens and hay and warm goats gave the look of practical and assured preparedness. Compared to the other homes, their home seemed happy. Even though they didn't have much to keep warm they were still prepared. That's what the phrase "assured preparedness" means.

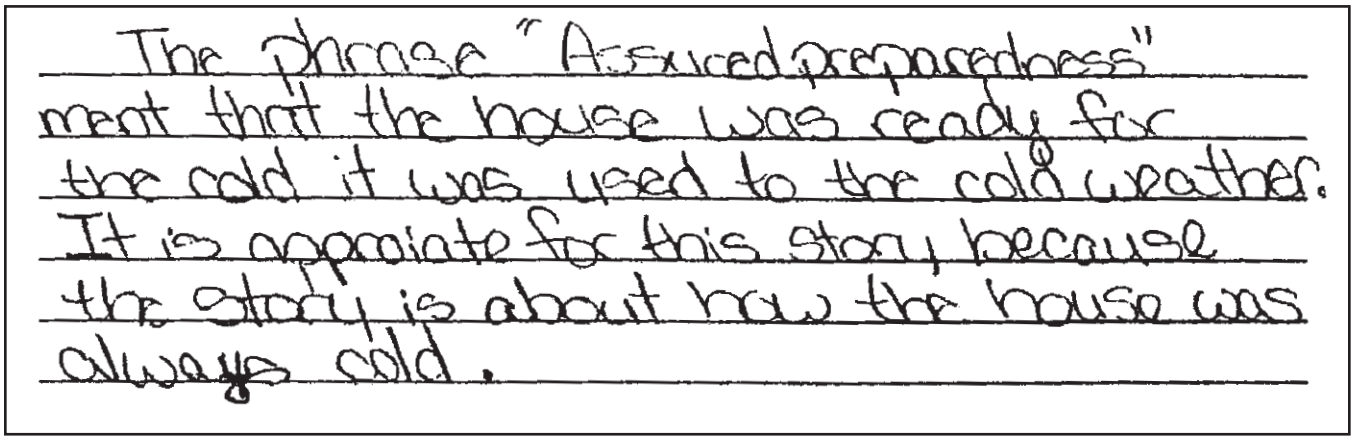
Score Point: 3

The student explains what the phrase "assured preparedness" means ("means that the house and the family were prepared for sure…That shows that they were ready for the cold weather"). The response does not specifically indicate why this is an appropriate description of the house, but uses two accurate and relevant details from the passage for support ("they had insulated walls, and they had the wood smoke"). The response provides evidence of general but not comprehensive understanding of the passage.


The phrase "assured preparedness" can mean anything, but this is what I think it is. I think that the phrase "assured preparedness" means that the house and the family were prepared for sure. Two example of this is when it says that they had insulated walls, and they had the wood smoke. That shows that they were ready for the cold weather.

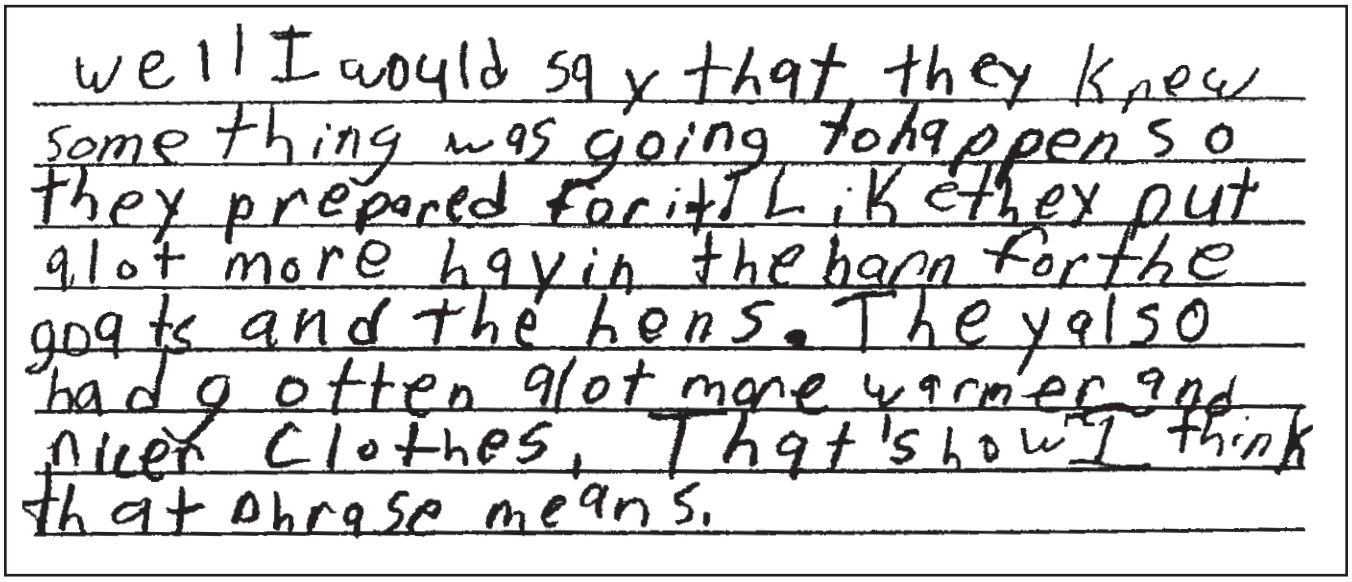
Score Point: 2

The student explains what the phrase "assured preparedness" means ("that the house was ready for the cold it was used to the cold weather"), as well as indicates why this is an appropriate description of the house ("It is approiate for this story because the story is about how the house was always cold"). However, the response does not include examples or details from the passage. This is an example of basic understanding of the passage.


The phrase "Assured preparedness" meant that the house was ready for the cold it was used to the cold weather. It is approiate for this story, because the story is about how the house was always cold.

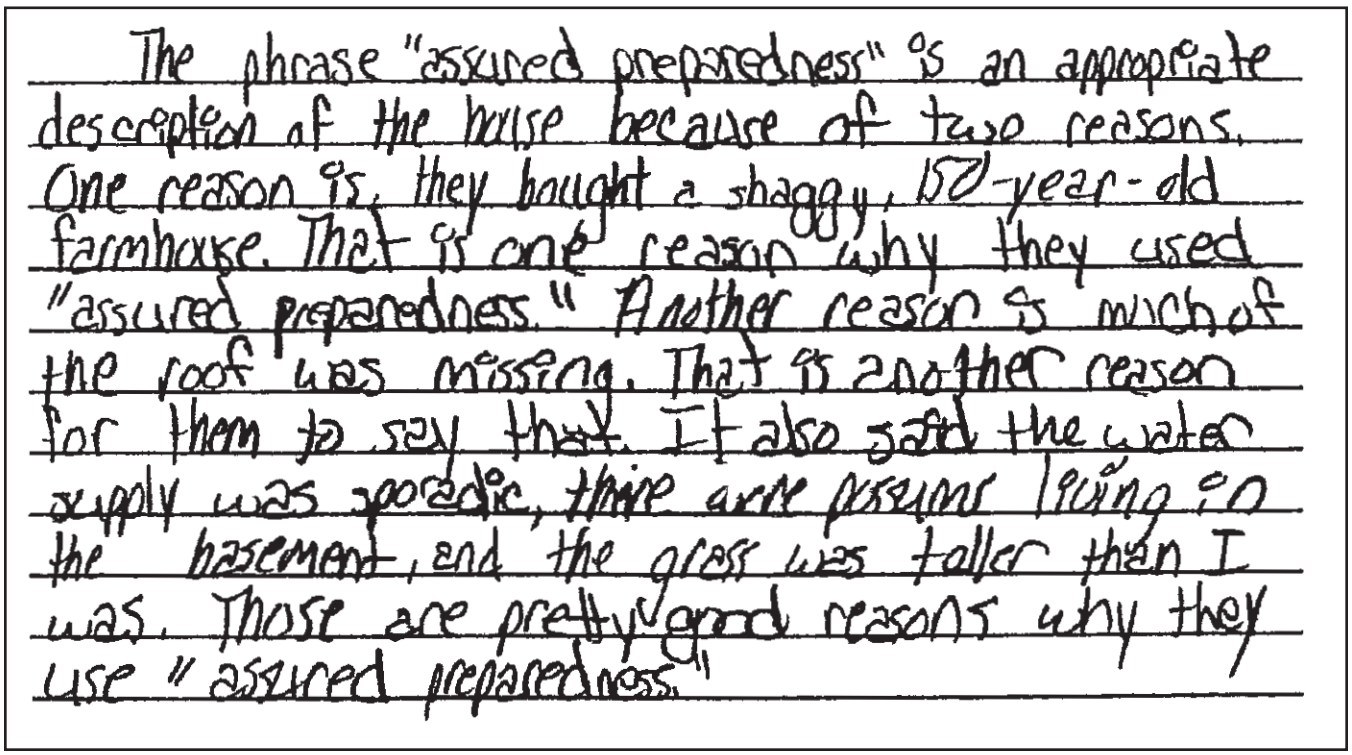
Score Point: 1

The student explains what the phrase "assured preparedness" means ("they knew something was going to happen so they prepared for it") but does not indicate why this is an appropriate description of the house or include examples or details from the passage. The response is inadequate and provides evidence of minimal understanding.


well I would say that they knew something was going to happen so they prepared for it. Like they put a lot more hay in the barn for the goats and the hens. They also had gotten a lot more warmer and nicer clothes. That's how I think that phrase means.

Score Point: 0

There is no evidence that the student understands the task. The response is incorrect and irrelevant.


The phrase "assured preparedness" is an appropriate description of the house because of two reasons. One reason is, they bought a shaggy, 150-year-old farmhouse. That is one reason why they used "assured preparedness." Another reason is much of the roof was missing. That is another reason for them to say that. It also said the water supply was sporadic, there were possums living in the basement, and the grass was taller than I was. Those are pretty good reasons why they use "assured preparedness."

THE WORLD'S FIRST SUPERSTAR

by Lauren Tarshis

On September 15, 1885, one of the world's most beloved celebrities died in a tragic train accident. News of this event made the front page in newspapers across the world. In the streets of New York City, grown men took off their hats and wept. In England, a distraught Queen Victoria proclaimed that she had lost a most dear friend, a gentle giant.

This beloved hero was not a president or king. In fact, he was not even a human being. But he was a giant—a six-ton African elephant named Jumbo.

Jumbo was, in the late 1800s, the most famous creature in the world, human or animal. As a young elephant, he was the star attraction of one of the world's first zoos, the London Zoological Gardens. Queen Victoria visited him regularly and fed him sweet rolls made by her personal chef. Children would line up for hours in the rain for a chance to ride for a few minutes on his back.

In 1881, Jumbo came to America after he was purchased by circus-owner P.T. Barnum. Barnum, a brilliant showman, made Jumbo into an even bigger star. He called him "the colossus of elephants, the biggest and most famous animal in the world!" He toured Jumbo across America in "Jumbo's Palace Car," a luxurious private railcar painted red and gold. Jumbo earned millions for Barnum, and became a true phenomenon. His picture appeared everywhere: not only in newspapers and magazines but on packages of sewing thread, baking powder, cigars, and toothpowder.

The First Pop Star

There's no doubt that Jumbo was a beautiful animal, strong and majestic. But why did he become so famous? He did no special tricks, couldn't juggle balls with his trunk or walk on two legs. In truth, he was not even particularly huge for an African elephant. Measuring 11 feet from the tips of his padded toes to the tops of his wrinkly shoulders, he was only a foot taller than an average male African elephant.

But Jumbo was the perfect celebrity for his times, when people were moving to cities and looking for new kinds of entertainment, when there was great curiosity about the natural world, especially about exotic creatures from far-off lands few people could hope to visit. In some ways, Jumbo was the world's first pop star, a Hilary Duff with a trunk, say, or a six-ton Will Smith.

Captured by Hunters

Jumbo the elephant was born in the jungles of Africa, in the area now known as Ethiopia. Today, African elephants are endangered, and hunting them is illegal. But in the mid 1800s, when Jumbo was born, the trumpeting of elephants rang out in all corners of the African continent, and large herds stomped through jungles, forests, savannas, and even deserts. People gave little thought to preserving nature. Hunters and rich adventurers prowled the wilds of Africa, eager to bring home

"trophies" like lion heads, leopard skins, and—especially prized—ivory elephant tusks, which could be carved into treasures or displayed as proof that a hunter had conquered Africa's largest beast.

It is likely that hunters killed Jumbo's mother for her ivory at the time they captured Jumbo. Her helpless calf was sold to an animal dealer who chained him up, packed him into a crate, and shipped him by boat to Europe. Many animals died during such miserable voyages, but Jumbo somehow survived. He was sold to Europe's first zoo, Jardin des Plantes, in Paris.

Zoos were new to Europe, and popular with the public. But even scientists had little idea how to care for animals that had been taken from their far-away habitats. Little thought was given to the comfort and happiness of the animal. Cages were small and dirty. Diets were unhealthful. Not surprisingly, most animals died quickly.

Jumbo was not treated well in Paris, and clearly his keepers did not recognize his star quality. For after three years, he was traded to the London Zoological Gardens, along with two anteaters, for a rhinoceros. It was a lucky break for Jumbo, who arrived in London in terrible shape—filthy and undernourished. He was put under the care of Matthew Scott, a zookeeper who was quiet, unhappy, and badly in need of a friend. The scrawny, under-nourished elephant and the lonely bachelor hit it off right away.

Sold to the Circus

It's impossible to say whether Jumbo was happy during his years in London, but under Scott's care, he grew.

12 And grew.

And grew, almost doubling in size in just a few years. He became the largest elephant in captivity and one of England's most cherished "citizens." That's why it was a shock when, in 1881, the London Zoo decided to sell Jumbo to the American P.T. Barnum. The sale of this "national treasure" outraged people throughout England. Mobs showed up at the zoo to protest. They showered Jumbo with treats, including sugar buns (which he loved) and huge bouquets of flowers (which he also loved . . . to eat).

But the London zoo's directors had decided that Jumbo was too big and unpredictable. He sometimes had temper tantrums at night if Scott wasn't with him, ramming his head against the walls of his cage. Zoo officials knew that male African elephants could become violent, and more than one director admitted to having nightmares about Jumbo going berserk in the crowded zoo.

The sale to Barnum was finalized. Jumbo was loaded into a special cage and with Matthew Scott at his side, he set sail for his new life in America as part of Barnum's "Greatest Show on Earth." For three years, he toured North America with Barnum's circus, where he looked on calmly (or, some said, with boredom) as Barnum's trained elephants marched and pranced around him. Barnum looked forward to decades of riches with Jumbo, since African elephants may live to be 60 or 70 years old.

Sadly, Jumbo's life was cut short just three years after his arrival in the U.S. The circus was in Canada, and Jumbo was waiting to be loaded into his private railcar. In the distance, Matthew Scott heard the sound of an oncoming train. He leapt onto the track and screamed for Jumbo to follow him up onto the embankment. Jumbo followed Scott, running so quickly that he nearly hit a fence. In panic, Jumbo ran back onto the tracks and was struck by the train. He died a few minutes later, clutching Scott's hand with his trunk. Scott cried for hours, and had to be carried from Jumbo's side.

In the Wild

Even in death, Jumbo remained the world's most famous animal. Barnum donated his hide to a university, and his skeleton to the Museum of Natural History. Several children in England and the U.S. were actually named after the elephant. In 1935, a Broadway musical was based on Jumbo's life, as was a Hollywood movie. Even today, no other animal has been loved by so many people around the world.

Though human interest in the animal world has continued to grow, there has never been another animal celebrity like Jumbo. Times slowly changed, and many scientists and animal lovers began to appreciate that taking animals from the wild was dangerous—and cruel. Today, those who love elephants don't wish to see them in circuses or zoos. Rather, they support efforts to protect them in the wild.

Reading Item B—2007 Benchmark Grade 7

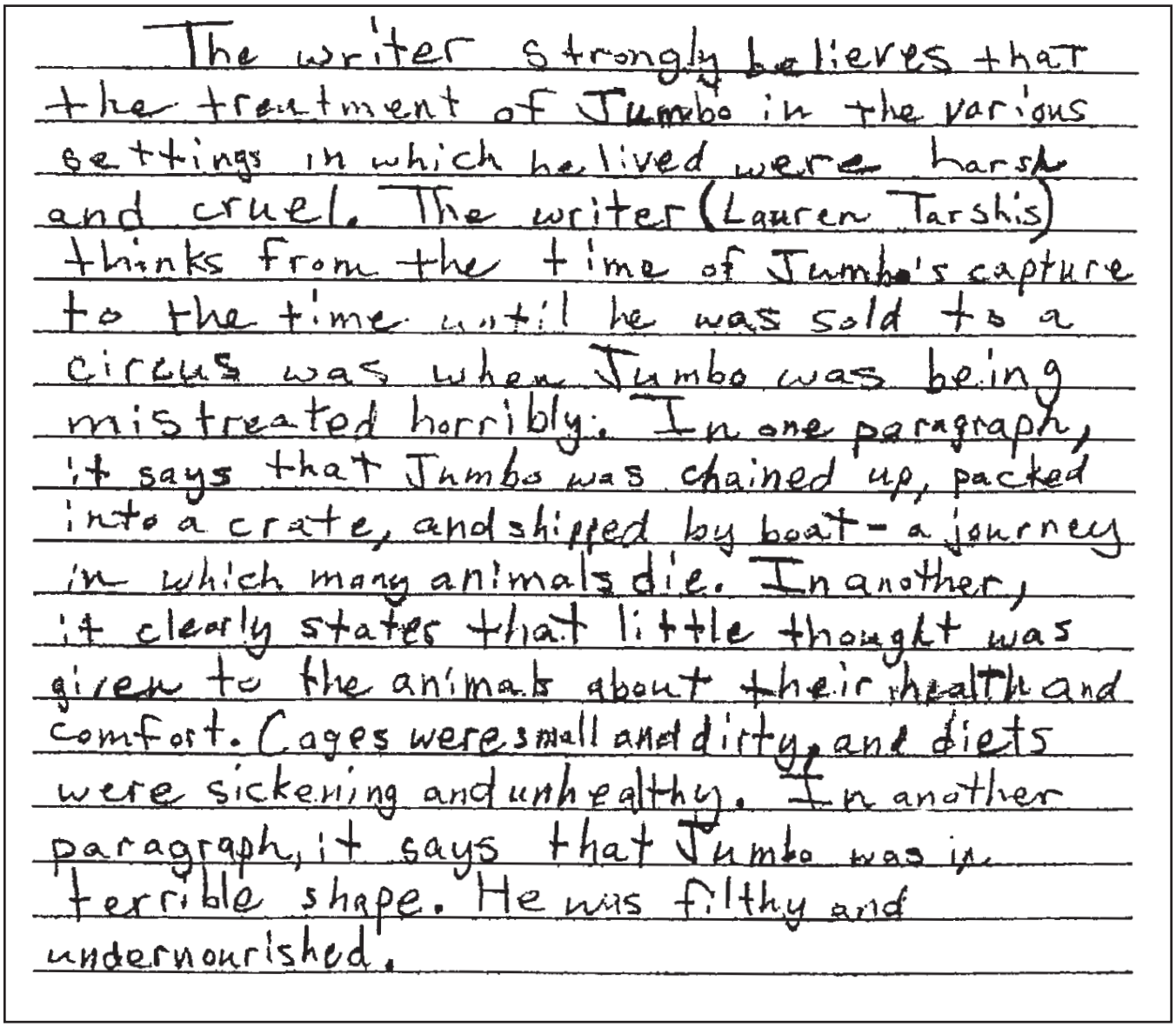
B. Explain what the writer believes about the treatment of Jumbo in the various settings in which he lived. Give three examples from the passage to support your response.

Reading Item B Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The response explains what the writer believes about the treatment of Jumbo in the various settings in which he lived and cites three examples from the passage to support the response.
3	The response explains what the writer believes about the treatment of Jumbo in the various settings in which he lived and cites two examples from the passage to support the response.
2	The response explains what the writer believes about the treatment of Jumbo in the various settings in which he lived and cites one example from the passage to support the response.
1	The response explains what the writer believes about the treatment of Jumbo in the various settings in which he lived. **OR** The response cites one example from the passage to support what the writer believes about the treatment of Jumbo.
0	The response is totally incorrect or irrelevant. There is no evidence that the student understands the task, or the response may be off-topic.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Score Point: 4

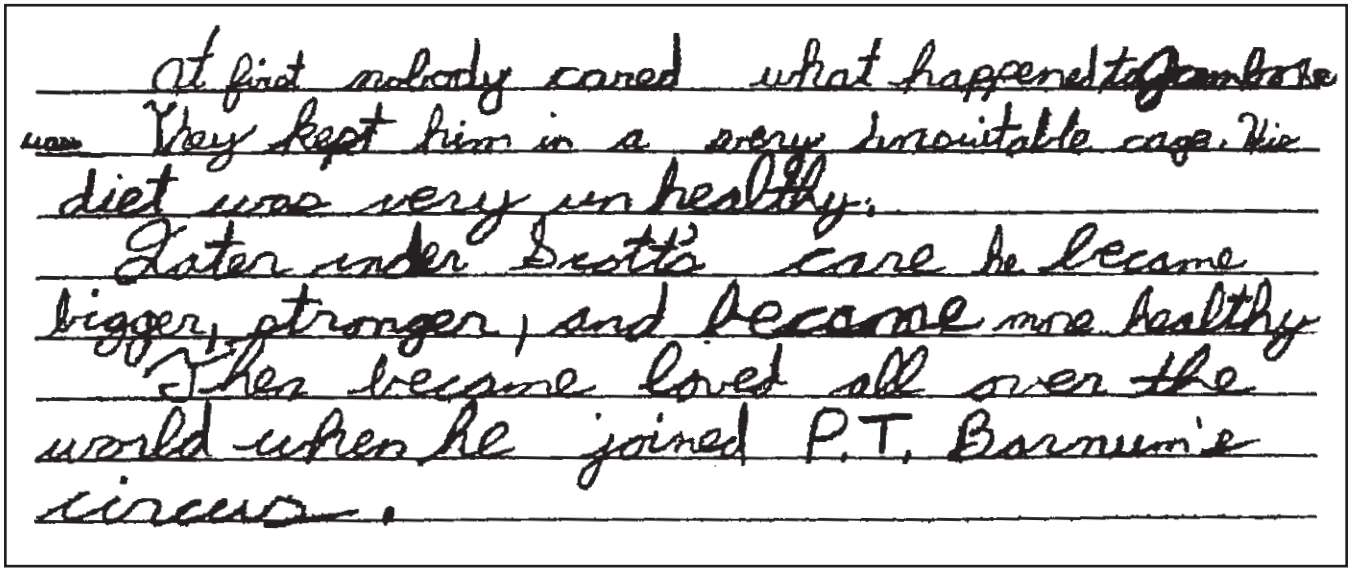
The student thoroughly explains what the writer believes about the treatment of Jumbo in the various settings in which he lived ("harsh and cruel") using several accurate and relevant examples from the passage ("Jumbo was chained up, packed into a crate, and shipped by boat—a journey in which many animals die"; "little thought was given to the animals about their health and comfort"; "Cages were small and dirty, and diets were sickening and unhealthy"; "Jumbo was in terrible shape. He was filthy and undernourished"). The response demonstrates a thorough understanding of the passage.



The writer strongly believes that the treatment of Jumbo in the various settings in which he lived were harsh and cruel. The writer (Lauren Tarshis) thinks from the time of Jumbo's capture to the time until he was sold to a circus was when Jumbo was being mistreated horribly. In one paragraph, it says that Jumbo was chained up, packed into a crate, and shipped by boat - a journey in which many animals die. In another, it clearly states that little thought was given to the animals about their health and comfort. Cages were small and dirty, and diets were sickening and unhealthy. In another paragraph, it says that Jumbo was in terrible shape. He was filthy and undernourished.

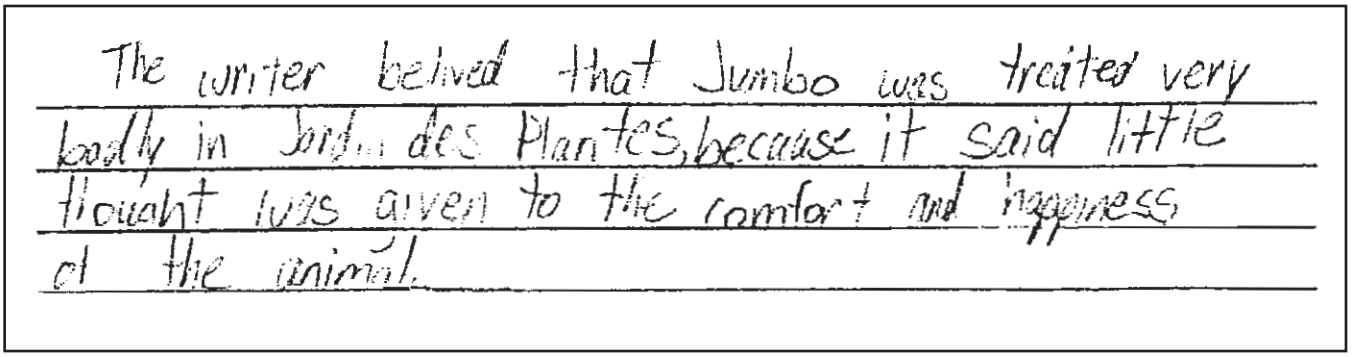
Score Point: 3

The student explains what the writer believes about the treatment of Jumbo in the various settings in which he lived ("nobody cared what happened to Jumbo"; "Then became loved all over the world"); however, the student uses only two examples of evidence from the passage ("They kept him in a very unsuitable cage"; "His diet was very unhealthy"). The response provides evidence of general but not comprehensive understanding of the passage.


At first nobody cared what happened to Jumbo. They kept him in a very unsuitable cage. His diet was very unhealthy.
Later under Scott's care he became bigger, stronger, and became more healthy. Then became loved all over the world when he joined P.T. Barnum's circus.

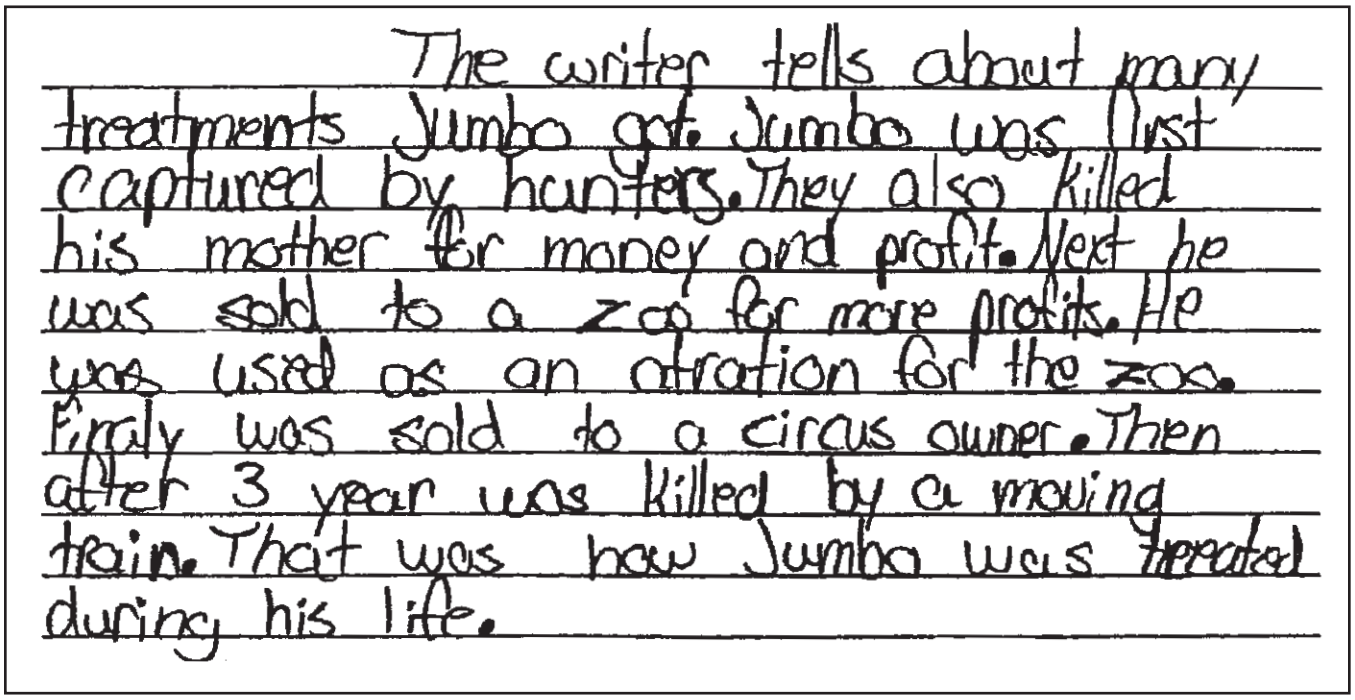
Score Point: 2

The student explains what the writer believes about the treatment of Jumbo in the various settings in which he lived ("treated very badly in Jardin des Plantes"); however, the student uses only one detail from the passage for support ("little thought was given to the comfort and happiness of the animal"). This is an example of basic understanding of the passage.


The writer belived that Jumbo was treated very badly in Jardin des Plantes, because it said little thought was given to the comfort and happiness of the animal.

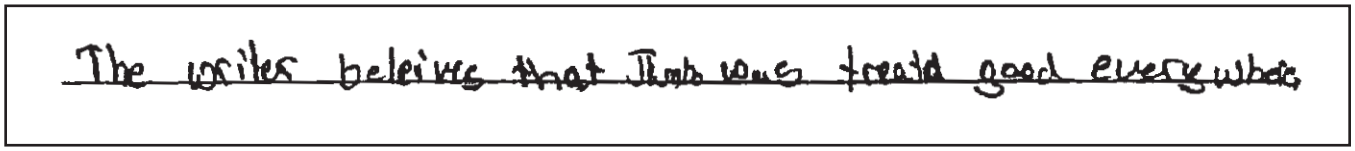
Score Point: 1

The student does not explain what the writer believes about the treatment of Jumbo in the various settings in which he lived but uses various examples that would have supported mistreatment. The response is inadequate and provides evidence of minimal understanding.


The writer tells about many treatments Jumbo got. Jumbo was first captured by hunters. They also killed his mother for money and profit. Next he was sold to a zoo for more profits. He was used as an atration for the zoo. Firaly was sold to a circus owner. Then after 3 year was killed by a moving train. That was how Jumbo was treated during his life.

Score Point: 0

There is no evidence that the student understands the task. The response is irrelevant.


The writes beleives that Jumbo was treated good everywhere

You Can Do Anything

by Rosemarie Colombraro

A ferocious ice storm ripped through Randleman, N.C., in 2002, tearing out nearly 400 loblolly pine trees in the town's Woodmen of the World Summer Youth Camp.

Some trees were uprooted, and others were so damaged they couldn't be saved. Broken tree limbs and trash littered the camp.

Star Scout Mark Case Jr., Troop 532 in Randleman, saw the devastation and knew it was time for action. But what should be done?

4 Loblolly pines have roots that grow close to the surface of the ground. If other loblolly trees are nearby, they will intertwine their roots like the weaving of a blanket. When one tree falls, others are often pulled out of the ground with it.

Replanting the area with another type of tree that could better handle such storms seemed to be a good idea. So Mark decided to turn the camp into an arboretum—a place where people could learn about different species of trees and shrubs.

"I was doing a project for school on how to change the world by helping your community," says Mark, 14.

7 He quickly realized he would need the rest of Troop 532 to get the work done. It didn't look as if this was going to be a one-man job.

Fund-Raising First

With the help of his parents, Mark went looking for donations from local and national organizations. He collected money from the Woodmen of the World lodges across North Carolina, and the Points of Light Foundation gave $500. The $1,500 collected went to buy trees and tools for his project.

Mark also asked arborists (tree experts) to help him pick the best trees and shrubs.

"I had to learn about the surface of the ground, and I had to plan how much fertilizer to use for each tree," Mark says. "We have red clay [soil] here, so we needed to put in a lot of fertilizer and mulch so the trees would grow."

Mark thought Join Hands Day, a national day for adults and children to volunteer together, would be a good day for the planting project. (You can visit www.joinhandsday.org for more information.)

On that day, Mark was hoping a few volunteers from his community would come to help his troop with digging and planting. Imagine Mark's surprise when more than 90 people showed up to plant trees!

13 "The youngest was around 7, [and the age range went] all the way up to about 60," Mark says. "Everyone worked hard, planting maples, oaks, cypress and dogwood trees."

Planting for the Future

With the help of his dad, Mark showed the Scouts how to plant the trees so they would grow strong and tall. Then the Scouts formed teams with other volunteers to share what they learned about planting.

It took about three people to dig, plant,

fertilize and stake each 6- to 10-foot-tall tree. "It's a lot harder to plant a bigger tree than a seedling," says Tenderfoot Scout Matthew Case, Mark's 12-year-old brother. Other Scouts interested in planting trees, Matthew says, "need to be prepared for a lot of digging and getting dirty."

But the result is more than worth the effort. The fruits and leaves from trees provide an important source of food for animals. Trees also provide a source of moisture by releasing water into the air through a process called transpiration.

Arboretums provide a place for people to gather and appreciate the importance of our forests. And they're fun to look at, too.

"It felt good to help the environment," says 14-year-old Life Scout Chris Millner. "I learned about the trees I planted. And [how] we wouldn't have to just look at open space at the camp. We could see beautiful trees. It was a lot of work, but I would do it again."

Out of 92 trees that were purchased or donated for the project, 59 were planted on Join Hands Day. The rest were planted later that fall or were left in pots and protected for the winter.

In 2003, Mark's Join Hands Day project won a National Award of Excellence from the Points of Light Foundation. He earned a plaque and $1,000 for his good work. Troop 532 plans to continue with cleanup and planting projects at the camp.

"Other Scouts can do this for their own communities," Mark says. "If you set your mind to do something, you can do anything. It's like climbing a mountain—you just have to keep moving."

"You can do things you never dreamed you could do."

Planting a Tree

Once you've got a potted tree that's ready to hit the ground, you'll find that planting it is a little more complicated than planting a smaller plant. Troop 532 followed these steps to planting a healthy tree:

(Tools you will need: a shovel, garden fork or pitchfork, two cedar stakes, tree ties and mulch.)

- Mark out a hole about three times the width of the pot.
- Dig a hole one and a half times deeper than the height of the pot.
- Score the sides of the hole by scratching it with a pitchfork. This will make it easier for the roots to penetrate the soil.
- Pound in the cedar stakes at outward facing angles. Leave enough room for the ball of roots in between. The stakes will help hold the tree as it grows sturdy roots and branches over the next year.
- Water the tree thoroughly and remove it from its pot. Gently loosen the roots.
- Put some loose soil into the hole. Next, place the tree in the center of the hole. Lay a shovel handle over the hole to gauge the planting depth. Add or remove soil so the tree will sit level with the ground around it.
- Once the tree is sitting at the right level, put the rest of the soil into the hole. Pack the soil down with the back of a shovel.
- If you have well-draining soil or live in a dry area, create a water-catching moat around the tree. If you have poorly draining soil or live in a wet area, plant the tree on a mound so water drains away from the root ball.
- Fasten ties to the trunk of the tree. The ties help the young tree stay upright until it learns to support itself. Don't make the ties too tight or they can damage the tree.
- Water the tree and add about three inches of mulch. Keep the mulch from touching the trunk of the tree. The mulch will hold in moisture for the tree. Keep the soil moist for the first year after the tree is planted.

Reading Item C—2007 Benchmark Grade 7

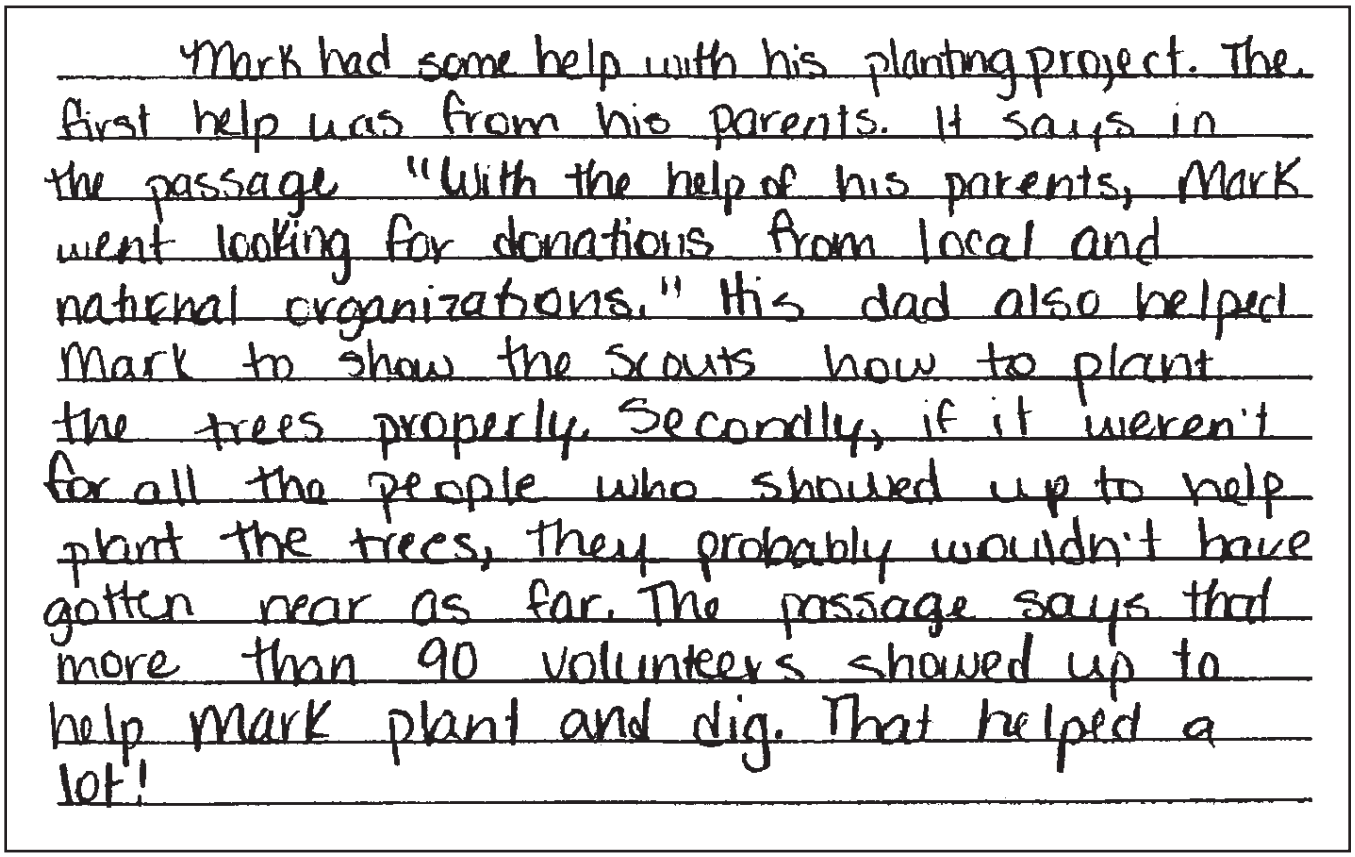
C. In paragraph 7 of the passage, the author states, "It didn't look as if this was going to be a one-man job." Identify the support Mark received with his project, using two examples from the passage. Describe the role each example played in the project.

Reading Item C Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The response identifies the support Mark received with his project using two examples from the passage and describes the role each example played in the project.
3	The response identifies the support Mark received with his project using two examples from the passage and describes the role one example played in the project.
2	The response identifies the support Mark received with his project using two examples from the passage. **OR** The response identifies the support Mark received with his project using one example from the passage and describes the role the example played in the project.
1	The response identifies the support Mark received with his project using one example from the passage.
0	The response is totally incorrect or irrelevant. There is no evidence that the student understands the task, or the response may be off-topic.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Score Point: 4

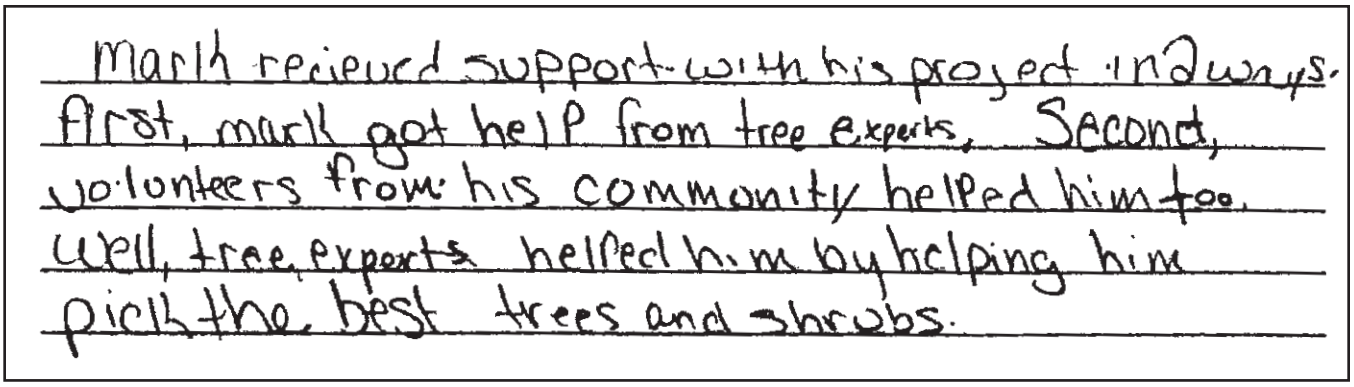
The student thoroughly identifies the support Mark received with his project ("parents"; "His dad"; "90 volunteers") and uses two accurate and relevant examples from the passage to describe the role each example played in the project ("'With the help of his parents, Mark went looking for donations from local and national organizations'"; "His dad also helped Mark to show the Scouts how to plant the trees properly"; "90 volunteers showed up to help Mark plant and dig"). The response demonstrates a thorough understanding of the passage.



Mark had some help with his planting project. The first help was from his parents. It says in the passage "With the help of his parents, Mark went looking for donations from local and national organizations." His dad also helped Mark to show the Scouts how to plant the trees properly. Secondly, if it weren't for all the people who showed up to help plant the trees, they probably wouldn't have gotten near as far. The passage says that more than 90 volunteers showed up to help Mark plant and dig. That helped a lot!

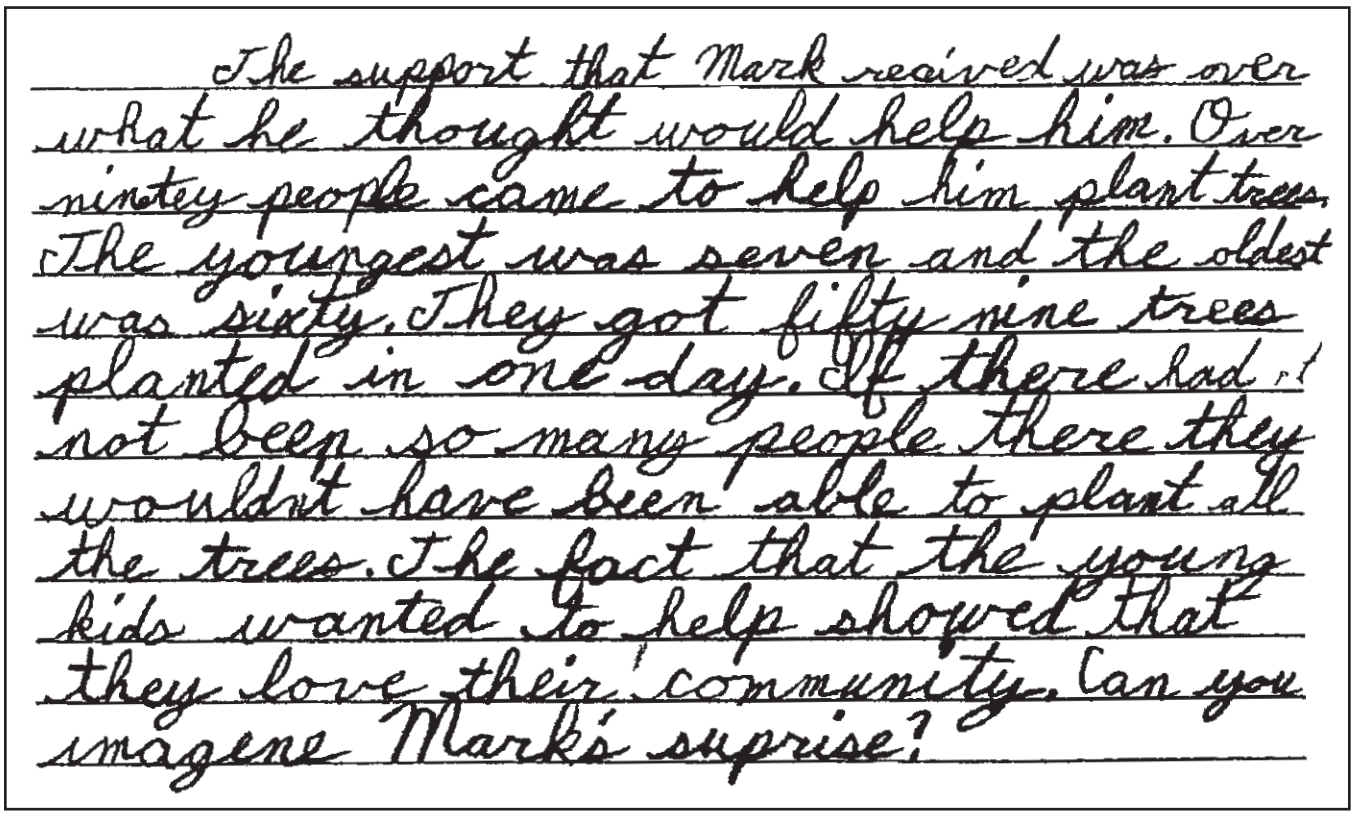
Score Point: 3

The student identifies the support Mark received with his project ("tree experts"; "volunteers from his community"); however, the student provides information from the passage to support only one example of the role that the examples played in the project ("helped him by helping him pick the best trees and shrubs"). The response provides evidence of general but not comprehensive understanding of the passage.


Mark recieved support with his project in 2 ways. first, mark got help from tree experts. Second, volonteers from his community helped him too. well, tree experts helped him by helping him pick the best trees and shrubs.

Score Point: 2

The student identifies one example of the support Mark received with his project ("Over ninety people came…The youngest was seven and the oldest was sixty") and provides one example from the passage to support the role the example played ("to help him plant trees…They got fifty nine trees planted in one day"). This is an example of basic understanding of the passage.


The support that Mark reaived was over what he thought would help him. Over ninety people came to help him plant trees. The youngest was seven and the oldest was sixty. They got fifty nine trees planted in one day. If there had not been so many people there they wouldnt have been able to plant all the trees. The fact that the young kids wanted to help showed that they love their community. Can you imagene Mark's suprise?

Score Point: 1

The student identifies one example of support Mark received with his project ("even Kids helping him also Adults"; "7 to 60 years old helping him"); however, no examples from the passage are used to support it. The response is inadequate and provides evidence of minimal understanding.

> Here are two examples Identifying the suport mark received with his project. One he said there were even Kids helping him also Adults. I bet the got done in a heart beat. It said there were 7 to 60 years old helping him. 60 years is alot. Those are two example Identifying the supert mark received with his project.

Score Point: 0

There is no evidence that the student understands the task. The response is irrelevant.

> In the story You Can Do Anything Mark received people.
> he received a plaque with a thousand dollar for his projects.

Acknowledgments

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WRITING RESPONSES

Domain Scoring

In domain scoring, which was developed in conjunction with Arkansas educators, the observation of writing is divided into several domains (categories), each composed of various features. The domains scored for Arkansas compositions are Content, Style, Sentence Formation, Usage, and Mechanics. (These domains are defined on the following page.) Each domain is evaluated holistically; the domain score indicates the extent to which the features in that domain appear to be under the control of the writer. The score reflects the student's performance for the entire domain with all features within the domain being of equal importance.

All responses are read independently by at least two readers. The two scores are averaged by domain. In cases where the two readers' scores are non-adjacent (a "1" and a "3," for example) in any domain, the response is read a third time by a Team Leader or the Scoring Director for resolution.

The domain scores, along with an awareness of the features comprising each domain, can be used to plan developmental or remedial instruction for the student.

Scoring Scale

Each domain is scored independently using the following scale:

4 = The writer demonstrates **consistent**, though not necessarily perfect, control* of almost all of the domain's features.

3 = The writer demonstrates **reasonable**, but not consistent, control* of most of the domain's features, indicating some weakness in the domain.

2 = The writer demonstrates **inconsistent** control* of several of the domain's features, indicating significant weakness in the domain.

1 = The writer demonstrates **little** or **no** control* of most of the domain's features.

*Control: The ability to use a given feature of written language effectively at the appropriate grade level. A response receives a higher score to the extent that it demonstrates control of the features in each domain.

The application of the scale, using actual student writing, was done with the assistance of a committee of Arkansas teachers and representatives of the Arkansas Department of Education.

Non-scoreable and Blank Papers

Compositions are scored, unless they are off-topic, illegible, incoherent, refusals to respond, written in a language other than English, or too brief to assess. A score of "NA" indicates that the student's writing entry was non-scoreable and that entry will receive a score of "0."

Content (C)
The Content domain includes the focusing, structuring, and elaborating that a writer does to construct an effective message for a reader. It is the creation of a product, the building of a composition intended to be read. The writer crafts his/her message for the reader by focusing on a central idea, providing elaboration of the central idea, and delivering the central idea and its elaboration in an organized text. Features are:

- Central idea
- Elaboration
- Unity
- Organization

Style (S)
The Style domain comprises those features that show the writer is purposefully shaping and controlling language to affect readers. This domain focuses on the vividness, specificity, and rhythm of the piece and the writer's attitude and presence. Features are:

- Selected vocabulary
- Selected information
- Sentence variety
- Tone
- Voice

Sentence Formation (F)
The Sentence Formation domain reflects the writer's ability to form competent, appropriately mature sentences to express his/her thoughts. Features are:

- Completeness
- Absence of fused sentences
- Expansion through standard coordination and modifiers
- Embedding through standard subordination and modifiers
- Standard word order

Usage (U)
The Usage domain comprises the writer's use of word-level features that cause written language to be acceptable and effective for standard discourse. Features are:

- Standard inflections
- Agreement
- Word meaning
- Conventions

Mechanics (M)
The Mechanics domain includes the system of symbols and cueing devices a writer uses to help readers make meaning. Features are:

- Capitalization
- Punctuation
- Formatting
- Spelling

Writing Prompts—2007 Benchmark Grade 7

These are the two writing prompts administered to all grade 7 students in April 2007.

Prompt #1

Your science teacher has asked the class to write on this topic:

Would you like to be an astronaut on the first mission to an unexplored planet? Why or why not?

Think about being an astronaut and going to a planet where no one has ever been. Would it be exciting? Would it be dangerous? Would you want to go?

Now write an essay discussing whether you would like to be an astronaut on the first mission to an unexplored planet. Give enough detail so that your science teacher will understand.

Prompt #2

The Arkansas Board of Parks and Tourism is having an essay contest that you have decided to enter. Essays must be written on this topic:

Arkansas is a great place!

Before you begin to write, think about what makes Arkansas a great place. What can you do here? How would you describe the great things about Arkansas to someone who has never been here?

Now write an essay for the Board of Parks and Tourism that shows Arkansas is a great place. Give enough detail so that your readers will understand.

Writer's Checklist

1. Look at the ideas in your response.
   - Have you focused on one main idea?
   - Have you used enough detail to explain yourself?
   - Have you put your thoughts in order?
   - Can others understand what you are saying?

2. Think about what you want others to know and feel after reading your paper.
   - Will others understand how you think or feel about an idea?
   - Will others feel angry, sad, happy, surprised, or some other way about your response? (Hint: Make your reader feel like you do about your paper's subject.)
   - Do you have sentences of different lengths? (Hint: Be sure you have a variety of sentence lengths.)
   - Are your sentences alike? (Hint: Use different kinds of sentences.)

3. Look at the words you have used.
   - Have you described things, places, and people the way they are? (Hint: Use enough detail.)
   - Are you the same person all the way through your paper? (Hint: Check your verbs and pronouns.)
   - Have you used the right words in the right places?

4. Look at your handwriting.
   - Can others read your handwriting with no trouble?

If I was an astronaut and they asked me to go on a mission to explore a planet that no ones ever been on I would probably say no. It dangerous because what If you knocked off your helmet and you can not breath. You can die If you dont get any air.

Another thing there might be some freaky things out there, like an aliene. What if there was a four head cow or a ten leged snake. There could be any thing out there that can harm you or even kill you. It would not be safe.

Another thing you could get seriously hurt. You could fall into a deep hole and break your arm or your leg or even your neck. What if you fall off a cliff or chuncks of rocks start to fall on you and you get trap with no food or anything to drink.

The most important thing is that there is no atmesphere. You you float away, or fall out of the ship and die of Suffocation. In conclusion that is why I would not go on the mission to explore a different planet that no ones been on.

Writing Annotation for Sample Response 1—Prompt 1—2007 Benchmark Grade 7

Content: 3

The central idea is clear (a mission to explore a planet is dangerous). There is a progression of ideas, and the writer organizes the response with a brief introduction, four main points, and a short conclusion. More elaboration and specific details are required for a higher score. Overall, this response demonstrates reasonable control of the Content domain.

Style: 3

In this response, there is some purposefully selected information ("You can die If you dont get any air"; "four head cow or a ten leged snake"; "chuncks of rocks start to fall"). However, there is little sentence variety which weakens the writer's voice. The writer demonstrates reasonable control of the Style domain.

Sentence Formation: 4

The writer uses complex sentences in addition to simple sentences, and most of the sentences are correct. This response demonstrates consistent control of Sentence Formation features.

Usage: 3

The writer reasonably controls the features of the Usage domain. Most of the inflections, agreement, and conventions are correct. However, some errors in tense and the omission of verbs contribute to a score of "3" in Usage.

Mechanics: 3

Formatting and capitalization are, for the most part, handled correctly. However, there are spelling and punctuation errors scattered throughout the response. The writer demonstrates reasonable control of Mechanics features.

Arkansas is a great place. It is full of natural beauty, is home to a historic capitol and capital building, and is the hometown to a former president. These are only a few of the reasons that Arkansas is such a great place.

First, Arkansas is full of natural beauty. In Hot Springs, Arkansas, there are many historic parks. Hot Spings gets its name from the many hot, steamy springs that flow naturally in this section of the state. During the winter, it is beautiful to see the steam rising from the ground. Also, in the north western section of Arkansas lie the Ozark mountains. Although the temperatures in Arkansas can be rather warm, these mountains remain snow-capped all year round. Since Arkansas lies in the Great Plains, it is a sight to see these beautiful mountains. These are a few examples of Arkansas' natural beauty.

Second, Arkansas is the home to a historic capital building. The capital building that stands in central Little Rock is the only state capital building that is nearly an exact replica of our nations capital building, only our state capital is much smaller. The dome is made of solid gold as are the six massive front doors. There is a beautiful

three-ton chandelier that hangs from the inside of the dome into the central section of the building. Also, the old state capital building houses many of the former first ladies' formal gowns. There are also many former plantation homes that demonstrate some of the rough past of Arkansas.

Last, Arkansas is hometown of former president, Bill Clinton. He was born in a southern small town close to Hot Springs. In Hot Springs, his former highschool still stands, but barely. He was one of the more well-known and famous presidents. He has made many speeches in the state capital building, including one in the old state capital building that has the whole room blocked of so no one can enter the "sacred Bill Clinton room." These are a few qualities that make Arkansas a great place.

In conclusion, Arkansas is a great place. From the natural beauty to the historic capital, to the president, it is wonderful. I love living in Arkansas.

Writing Annotation for Sample Response 2—Prompt 2—2007 Benchmark Grade 7

Content: 4

The writer demonstrates consistent control of the Content domain. A clear central idea ("Arkansas is a great place") is sustained throughout the response. The writer includes enough details to give the reader a clear idea of the message and elaborates these ideas evenly. The response is well organized.

Style: 4

The vocabulary in this response is descriptive and the information is carefully selected ("hot, steamy springs that flow naturally"; "mountains remain snow-capped all year round"). Sentences are varied and rhythmic, the writer's voice is strong, and the tone is sustained. This response demonstrates consistent control of the Style domain.

Sentence Formation: 4

The writer exhibits consistent control of Sentence Formation features. The writer skillfully uses simple, compound, and complex sentences with no sentence structure errors.

Usage: 4

In this lengthy response, the writer skillfully handles inflections, agreement, tenses, and conventions. The writer consistently controls the features of the Usage domain.

Mechanics: 4

This response demonstrates consistent control of the Mechanics domain. There are very few misspelled words. The writer skillfully handles formatting, capitalization, and punctuation.

One morning, I received a letter asking me to take a trip to explore an unexplored planet. I was so excited! I knew that it would be very dangerous and maybe life threatening. But who could pass up an opportunity such as this! I couldn't! I'm a daredevil and would do anything. I quickly wrote back explaining that I would be thrilled to. The only problem is my family. Especially my mother who is such a worrier. I got the nerve to tell her and she wasn't happy. Not one little bit.

I was on the way to the spaceship. I had been through several weeks of difficult yet fun training. "I am ready for this", I thought. But once I stepped on that shuttle, my heart was pounding, my palms were sweating, and I had butterflies in my stomach. Then all of a sudden, even before I was prepared- 5-4-3-2-1! Blast off! Boom! My shuttle was racing up towards the open sky! I was as nervous as ever and my brain could hardly function right. Once I was in space though, and I saw Earth, planets, moons, comets, and stars, I knew how lucky I was. That was definetely a journey of a lifetime.

Now I had to find that planet. It was somewhere I knew. I had all the technology in

the world to find it. For some reason, I just wanted to find it by instinct. I just wouldn't feel right, going back home saying, "Oh yeah! I found that planet all right. It was way too easy," when really all of these high-tech instruments found it.

My heart told me which way to go and then I saw it. A beautiful green planet that resembled Earth. I steered straight towards it with confidence that I would find something amazing. And boy did I. Trees, plants, flowers, and water flourished everywhere. I had found something that used to be abundant on Earth and wasn't now. Earth was covered with buildings and sky scrapers. This planet was what is was like back when Adam and Eve existed. Except, in this place there weren't any animals, insects, or humans. The only sound was water-streams trickling and waterfalls falling.

I had to make a decision. I knew that if I went back to Earth to share about this planet, people would destroy it. So when I returned home I stated that I didn't find anything at all. But I visit this planet ever so often now.

Writing Annotation for Sample Response 3—Prompt 1—2007 Benchmark Grade 7

Content: 4

This response has a clear central idea and there is a logical progression of ideas. The writer details a personal experience of becoming an astronaut and exploring a planet, and supports the narrative with full, even elaboration. The response is organized chronologically. There is a clear progression of ideas and a thoughtful closure. The writer demonstrates consistent control of the Content domain.

Style: 4

The vocabulary in this response is descriptive and the information is carefully selected ("I had butterflies in my stomach"; "My heart told me which way to go"; "Trees, plants, flowers, and water flourished everywhere"). Sentences are varied and rhythmic, the writer's voice is strong, and the tone is sustained. This response demonstrates consistent control of the Style domain.

Sentence Formation: 4

The writer exhibits consistent control of Sentence Formation features. With the exception of a few sentence fragments that appear to have been written for effect, this response contains skillfully constructed complex sentences.

Usage: 4

The response is almost error free. The writer skillfully handles inflections, agreement, tenses, and conventions. The response demonstrates consistent control of the Usage domain.

Mechanics: 4

With consistent control of formatting, spelling, capitalization, and punctuation, the writer merits a score of "4" in Mechanics.

SCIENCE RESPONSES

Science Item A—2007 Benchmark Grade 7

A. Answer the following.

1. What is the water cycle?

2. Describe, or draw and label, a diagram of the stages of the water cycle.

Science Item A Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The response includes use of a form of the words evaporation, condensation, and precipitation in Part 2.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown. Ex: Contains a definition of the water cycle that fails to communicate continuity but is otherwise correct; no other credit given.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**1 point possible** 1 point: **Correct definition of the water cycle (students may also refer to the water cycle as the hydrological cycle or hydrologic pattern).** Ex: • "The continuous movement of water from water sources, such as lakes or oceans, into the air, onto land, into the ground, and/or water sources." • "Water moves from the ocean to the air to the land and back again; the endless movement of water in nature." • "The continuous movement of water between the Earth and the atmosphere." • "The constant movement of water above, on, and below the earth's surface." The definition must give some indication of a repeating cycle (continuous movement); the key points between which the water moves are the Earth's surface (Ex: ground, lakes, oceans) and the atmosphere (Ex: air, clouds, sky). **Note: Do not give credit for responses that only define the water cycle in terms of itself. Ex: "The water cycle is the cycle that water takes on earth."**

Solution and Scoring (continued)

Part	Points
2	**3 points possible** The response may use both a diagram and a description to answer the question. Apparent deficiencies in one may be accounted for in the other (Ex: an apparently missing label in a diagram might be accounted for in an accompanying description). However, contradictory content eliminates credit for that portion of the response. The diagram or description must somehow indicate the cyclical nature of the water cycle. This might be accomplished by using arrows between stages, word usage as in Part 1 above, and/or features in the drawing (Ex: rain falling on mountains with rivers running downhill to lakes, oceans). The response may also contain stages such as respiration, transpiration, and collection; however, they are not required. To receive full credit, any inclusion of any non-required stages must be correct (no incorrect descriptions, orderings, placements in diagram, etc.). 3 points: **A correct and complete answer will:** • contain the three required stages (evaporation, condensation, precipitation), which are correctly placed if in a diagram or correctly described if in text; • be correctly ordered; • contain correctly labeled/described (using forms of the words evaporation, condensation, and precipitation for a score of 4); and • include the cyclical relationship of the stages indicated. OR 2 points: **A generally correct and complete answer will:** • correctly explain/describe or include two of the three required stages; or • have two of the three required stages correctly labeled, placed, or ordered; or • be correct/complete with the exception of failing to indicate cyclical relationship of stages. OR 1 point: **A minimally correct and complete answer will:** • include a diagram that would otherwise be correct/complete or generally correct/complete but has no labeled stages; or • list the three required stages with no explanations/descriptions or diagram; or • correctly explain/describe or include only one of the three required stages; or • have only one of the three required stages correctly labeled, placed, or ordered; or • be generally correct/complete with the exception of failing to indicate cyclical relationship of stages (Ex: explains two required stages without indicating a cycle, shows three stages with one mislabeled, and does not indicate a cycle).

1. The water cycle is the constant motion that water takes from the ocean, up into the air, down onto the ground, and back to the Ocean

2.

SCORE: 4 **Points**

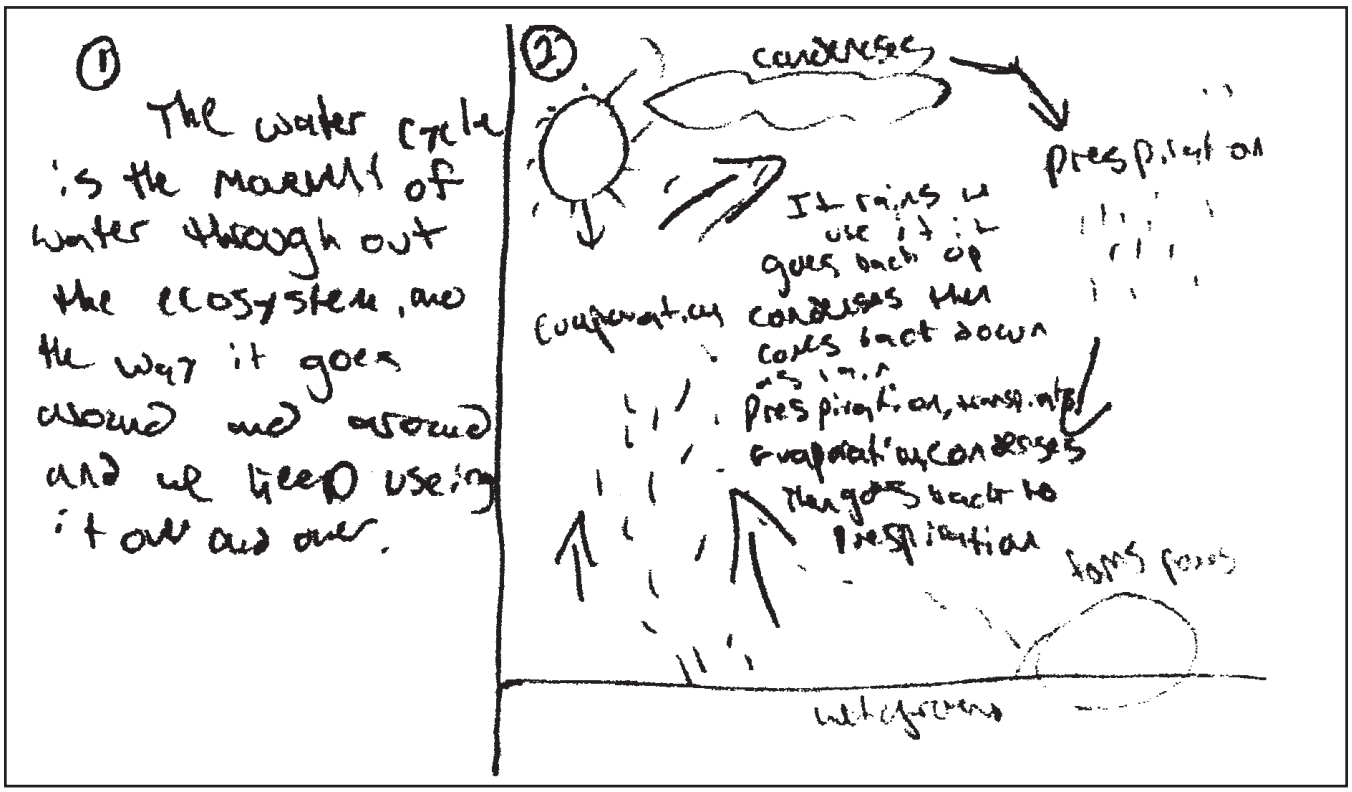
Part 1:

Correct definition:	"the constant motion that water takes from the ocean, up into the air, down onto the ground, and back to the ocean" Communicates continuous movement of water from Earth to air and back.	1

Part 2:

Correct and complete diagram:	All three required stages, correctly placed, correctly ordered, and correctly labeled with correct terms and cycle indicated.	3

TOTAL POINTS: **4**



SCORE: 3 **Points**

Part 1:

Incorrect definition:	"The water cycle is the movement of water through out the ecosystem, and the way it goes around and around and we keep useing it over and over." "The ecosystem" is vague—water moves through several different types of, and countless individual, ecosystems; the water cycle is not about human use.	–

Part 2:

Correct and complete diagram and description:	All three required stages, correctly placed, correctly ordered, and correctly labeled with correct terms (not necessary since this paper is not a 4) and cycle indicated. Included description is correct; inclusion of transpiration ("transpirats") alongside evaporation after precipitation is OK.	3

TOTAL POINTS: **3**

1. The water cycle is water the we use over and over again.

2. We start with the evaporation thats when the sun soaks up the water in the clouds. The condensation that when the clouds get full of water and the clouds get Dark. Then precipitation is when the clouds let water loose and that what we call Rain.

SCORE: 2 **Points**

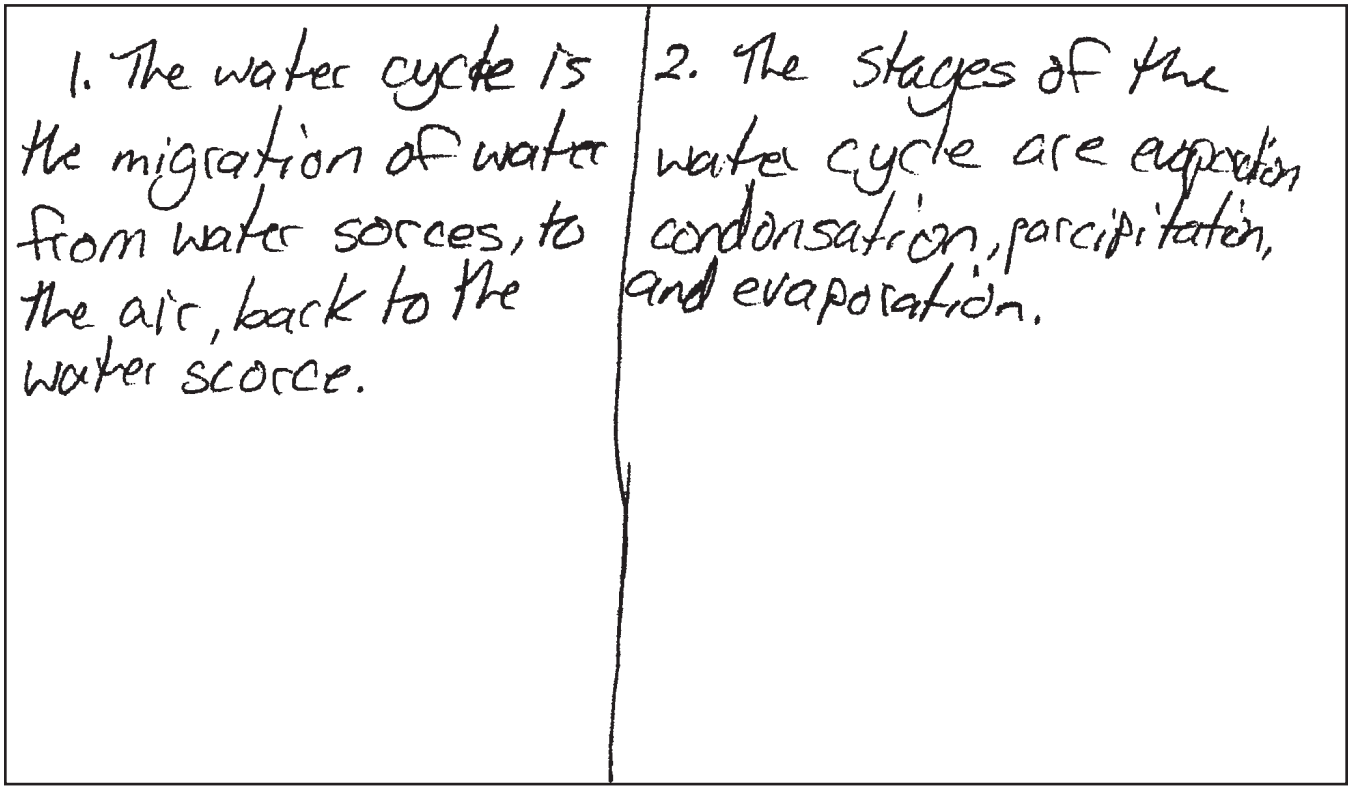
Part 1:

Incorrect definition:	"The water cycle is water the we use over and over again." No evidence of water moving from Earth to atmosphere; water cycle is not about human use.	–

Part 2:

Generally correct and complete description:	All three required stages are correctly described and ordered but no cycle is indicated. The description is correct and complete with the exception of failing to indicate cyclical relationship of stages.	2

TOTAL POINTS: **2**



SCORE: 1 **Points**

Part 1:

Incorrect definition: "The water cycle is the migration of water from water sorces, to the air, back to the water scorce." –

The definition does not indicate continuous movement.

Part 2:

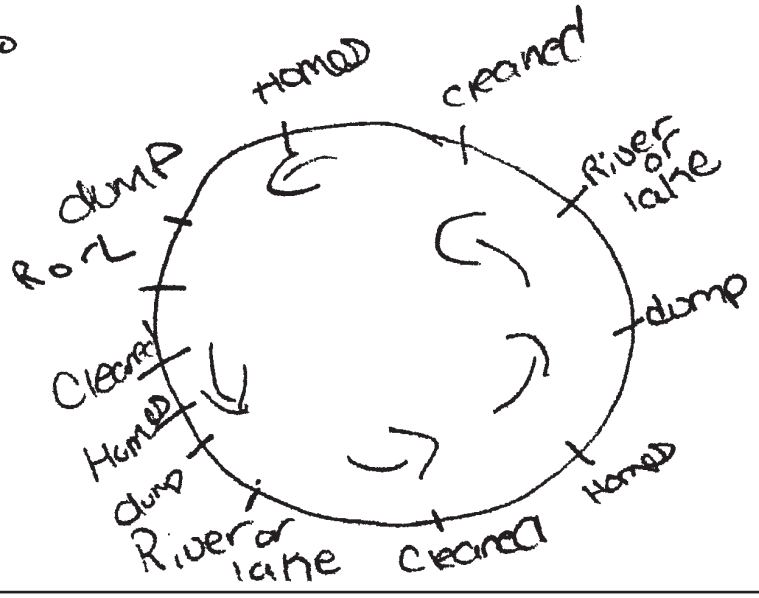
Minimally correct and complete description: "The stages of the water cycle are evaporation condonsation, parcipitation, and evaporation." 1

The description lists the three required stages with no explanations/descriptions or diagram.

TOTAL POINTS: **1**

1a A watercycle is a cycle maybe that Recycles water.

2a



SCORE: 0 **Points**

Part 1:

Incorrect definition:	"A water cycle is a cycle maybe that recycles water." The definition defines a water cycle in terms of itself.	–

Part 2:

Incorrect diagram:	The diagram depicts a water supply cycle.	–

TOTAL POINTS: **0**

Science Item B—2007 Benchmark Grade 7

B. *Daphnia* are small crustaceans that live in water. The table below shows the changes in *Daphnia* heartbeats in different solutions.

Daphnia	**Heartbeat in Water**	**Heartbeat in Water with Caffeine**	**Heartbeat in Water with Alcohol**
#1	250	320	210
#2	230	300	180
#3	270	340	200

1. How do caffeine and alcohol differ in their effects on the heartbeats of *Daphnia*?

2. Coffee contains caffeine. Based on this experiment, how would drinking a cup of strong coffee affect a person's heartbeat?

3. Blood pressure is a number that shows the maximum and minimum pressures of blood on veins and arteries. How would drinking four cups of strong coffee each day affect a person's blood pressure? Explain your answer.

Science Item B Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3 points.
2	The student earns 2 points.
1	The student earns 1 point, or some minimal understanding is shown. Ex: Correct answer of "blood pressure will increase" in Part 3 with no explanation, or with a vague or incomplete explanation, with no other credit earned in the problem.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**2 points possible** 1 point: **Caffeine increases the heart rate (or equivalent).** Ex: beats faster, more; speeds up, quickens, rises. AND 1 point: **Alcohol decreases the heart rate (or equivalent).** Ex: beats slower, less, slows down, drops.
2	**1 point possible** 1 point: **Drinking coffee will increase the heart rate (or equivalent).** Ex: make the heart beat faster, make the heart beat more, speed the heart rate.
3	**1 point possible** 1 point: **Correct answer and explanation.** Blood pressure will increase because increasing the amount of caffeine will cause the heart rate to increase, which will increase blood pressure (or equivalent, see above examples.) **Note: Do not give credit for a correct answer with an incorrect or missing explanation.**

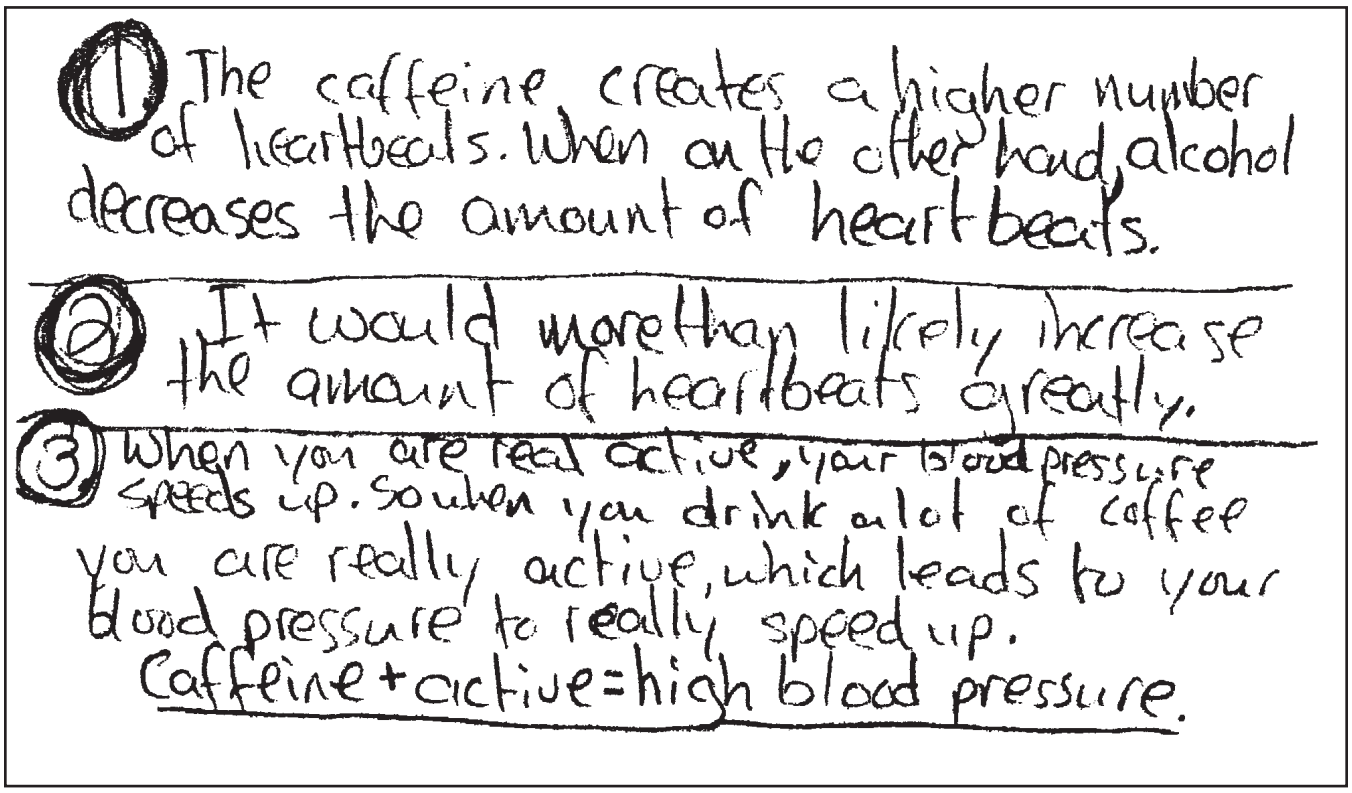
1) caffine raises heartbeat – Alcohol lowers heartbeat

2) coffee would raise a persons heartbeat

3) would raise the blood pressure because it would raise the heartbeat

SCORE: 4

		Points
Part 1:		
2 correct answers:	"caffine raises heartbeat"	1
	"Alcohol lowers heartbeat"	1
Part 2:		
Correct answer:	"coffee would raise a person's heartbeat"	1
Part 3		
Correct answer and explanation:	"would raise the blood pressure because it would raise the heartbeat"	1
TOTAL POINTS:		**4**



SCORE: 3 **Points**

Part 1:

2 correct answers:	"The caffeine creates a higher number of heartbeats."	1
	"alcohol decreases the amount of heartbeats."	1

Part 2:

Correct answer:	"It would...increase the amount of heartbeats"	1

Part 3

Correct answer with incorrect explanation:	"blood pressure…really speed up." Student links coffee to activity level, and activity level to raised blood pressure. However, there is no mention of heartbeats or heart rate.	–

TOTAL POINTS: **3**

1. Caffeine and Alcohol can make the heartbeat of a Daphina rise up and lower down.
2. It makes our hearts beat slow.

3. Their blood pressure rises from so much caffeine.

SCORE: 2 **Points**

Part 1:

2 correct answers:	"Caffeine…rise up."	1
	"Alcohol…lower down."	1

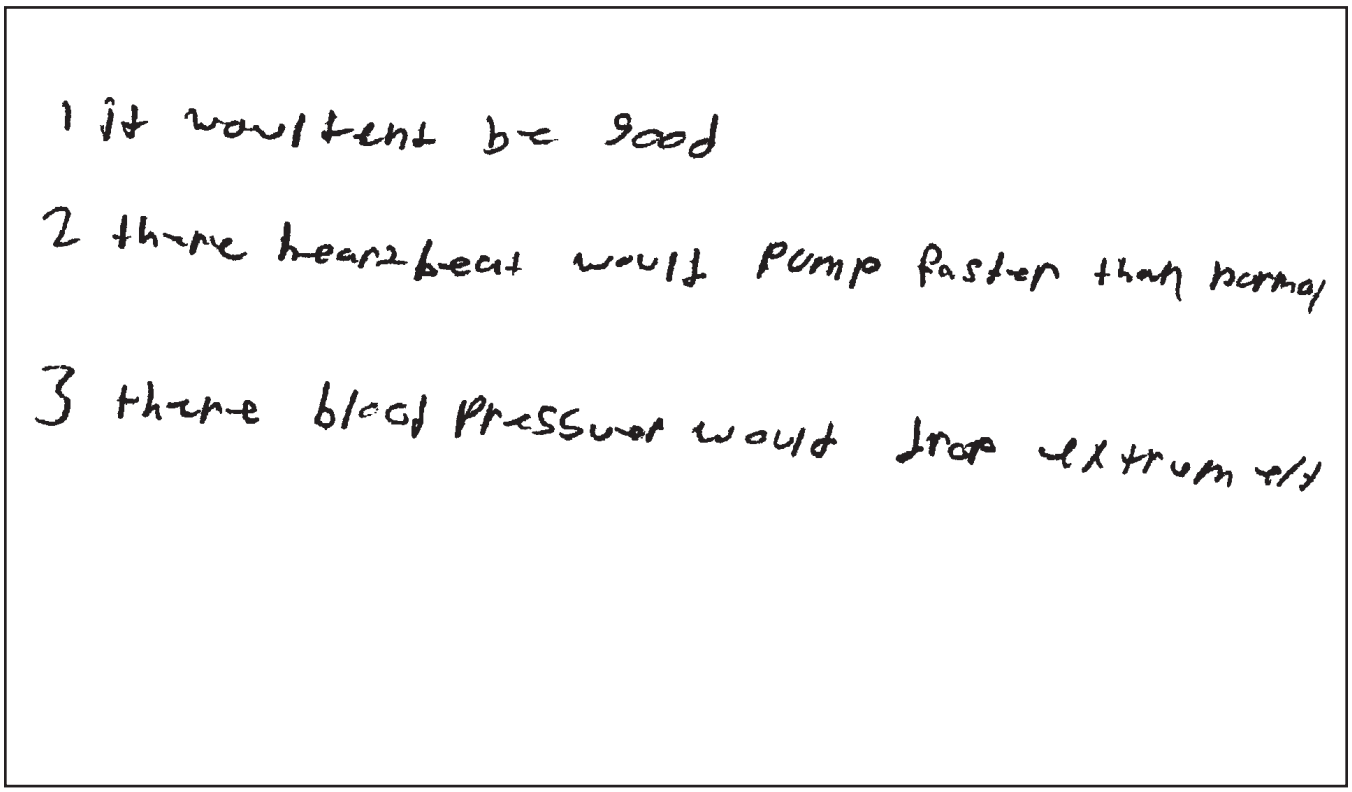
Part 2:

Incorrect answer:	"It makes our hearts beat slow."	–

Part 3

Correct answer with no explanation:	"Their blood pressure rises"	–

TOTAL POINTS: **2**



SCORE: 1		**Points**
Part 1:		
Incorrect answer:	"it wouldent be good."	–
Part 2:		
Correct answer:	"there heartbeat would pump faster than normal"	1
Part 3		
Incorrect answer with no explanation:	"there blood pressuer would drop extremely"	–
TOTAL POINTS:		**1**

1. How do caffeine and alchol differ in their effects on the heartbeats of Daphnia?
2. Coffee contains caffeine. Based on this experiment, how would drinking a cup of strong coffee affect a person's heartbeat?
3. Blood pressure is a number that shows the maximum and minimum pressures of blood on veins and arteries. How would drinking four cups of strong coffee each day affect a person's blood pressure?

SCORE: 0 **Points**

Part 1:
Incorrect: Does not attempt to answer but repeats prompt. –

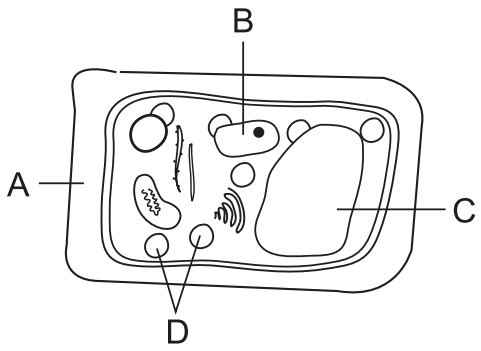
Part 2:
Incorrect: Does not attempt to answer but repeats prompt. –

Part 3
Incorrect: Does not attempt to answer but repeats prompt. –

TOTAL POINTS: **0**

Science Item C—2007 Benchmark Grade 7

C. The diagram below shows a plant cell.



Plant Cell

1. What are the parts of the cell that are labeled A, B, C, and D?

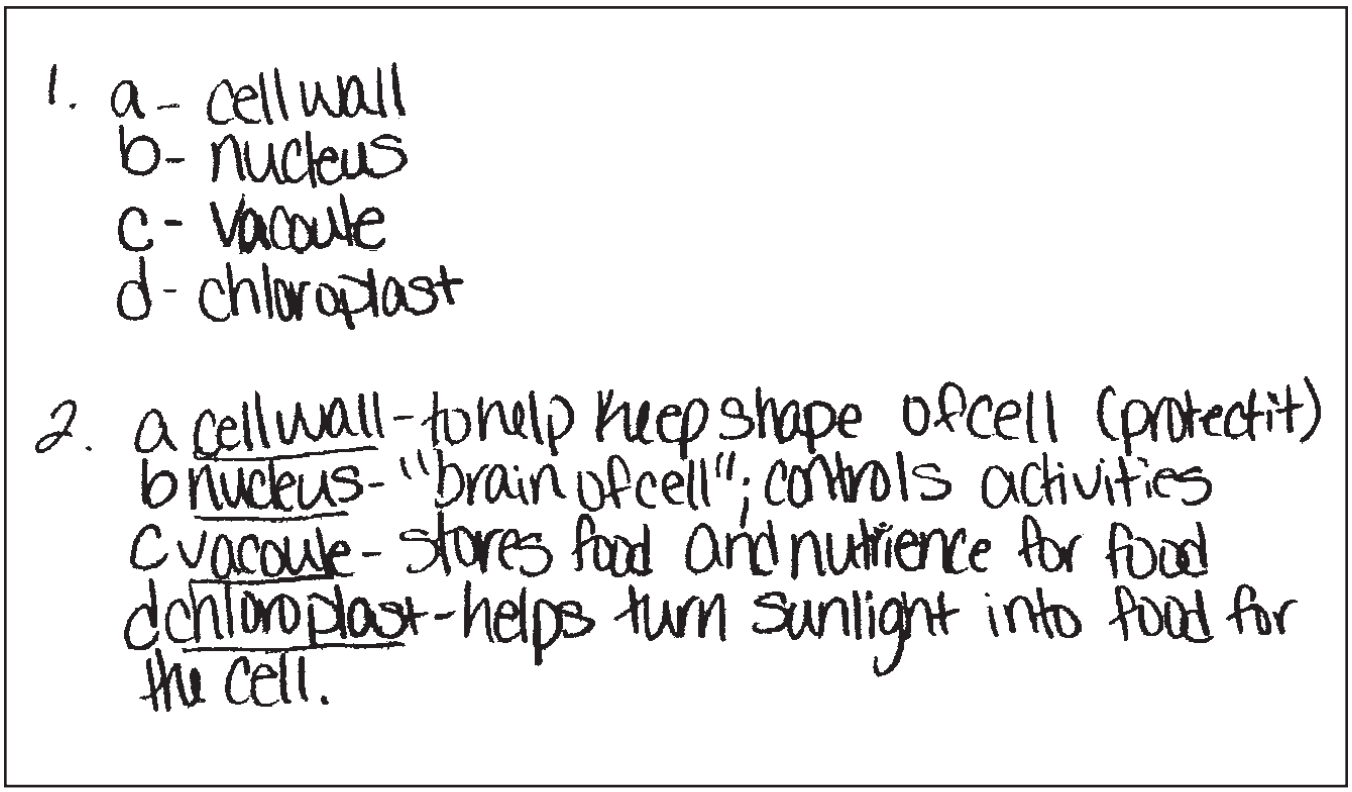
2. Give the function of each labeled cell part.

Science Item C Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown. Ex: A response that gives a legitimate plant cell part in Part 1 (but not one of the four correct answers) and also provides a correct function for that cell part in Part 2, and that has earned no other credit in the problem. Ex: If in Part 1D the student responds "mitochondria" and in Part 2D responds "the powerhouse of the cell," and no other credit was earned in the problem, the response would receive a score of 1.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**2 points possible** 2 points: **½ point for each cell structure correctly identified.** A—cell wall B—nucleus C—vacuole (student may also correctly respond with "water vacuole," or "large vacuole;" however, "**contractile** vacuole" is incorrect (it is an animal cell organelle). D—chloroplasts
2	**2 points possible** Note: For Part 2, if the student response for a given item contains both correct and incorrect functions, credit is given for the correct function and the incorrect functions(s) are treated as incorrect statements: a "3/4" score issue. 2 points: **½ point for each correct function identified.** Give credit for correct functions or equivalent (only one function per cell part need be given), regardless of the answer/label provided in Part 1. A—[The cell wall] supports the cell; protects the cell. B—[The nucleus] controls the cell; runs the cell; is the "brain" of the cell. C—[A vacuole] stores water, food, or waste; releases water, food, or waste; maintains cell pressure, stiffness, or turgor. D—[Chloroplasts] are where photosynthesis occurs, make food for the cell. OR **½ point for each correct function based on a wrong (incorrectly assigned) answer given in Part 1.** That is, give credit for a correct function for one of the four correct organelle names from Part 1 that is associated with the wrong part of the cell diagram. Ex: If "C" is labeled as the nucleus (one of the four correct Part 1 answers but associated with the wrong part of the cell diagram), give ½ point credit for either the correct function of a vacuole (see above) or of a nucleus. **vs.** Ex: If "D" is labeled as mitochondria (not one of the four correct Part 1 answers) and the function is given as "the powerhouse of the cell" (the function of mitochondria), no credit is given. **Note: A cell part function can only receive credit once in Part 2.** Ex: In Part 1, "B" and "C" are both labeled "nucleus." In Part 2, the answer to "B" is "controls the cell," and the answer to "C" is "the brain of the cell" (both of which are functions of the nucleus.) Half a point is earned for the first instance of the function of the nucleus (Part 2B), but not for the second (Part 2C).



SCORE: 4 **Points**

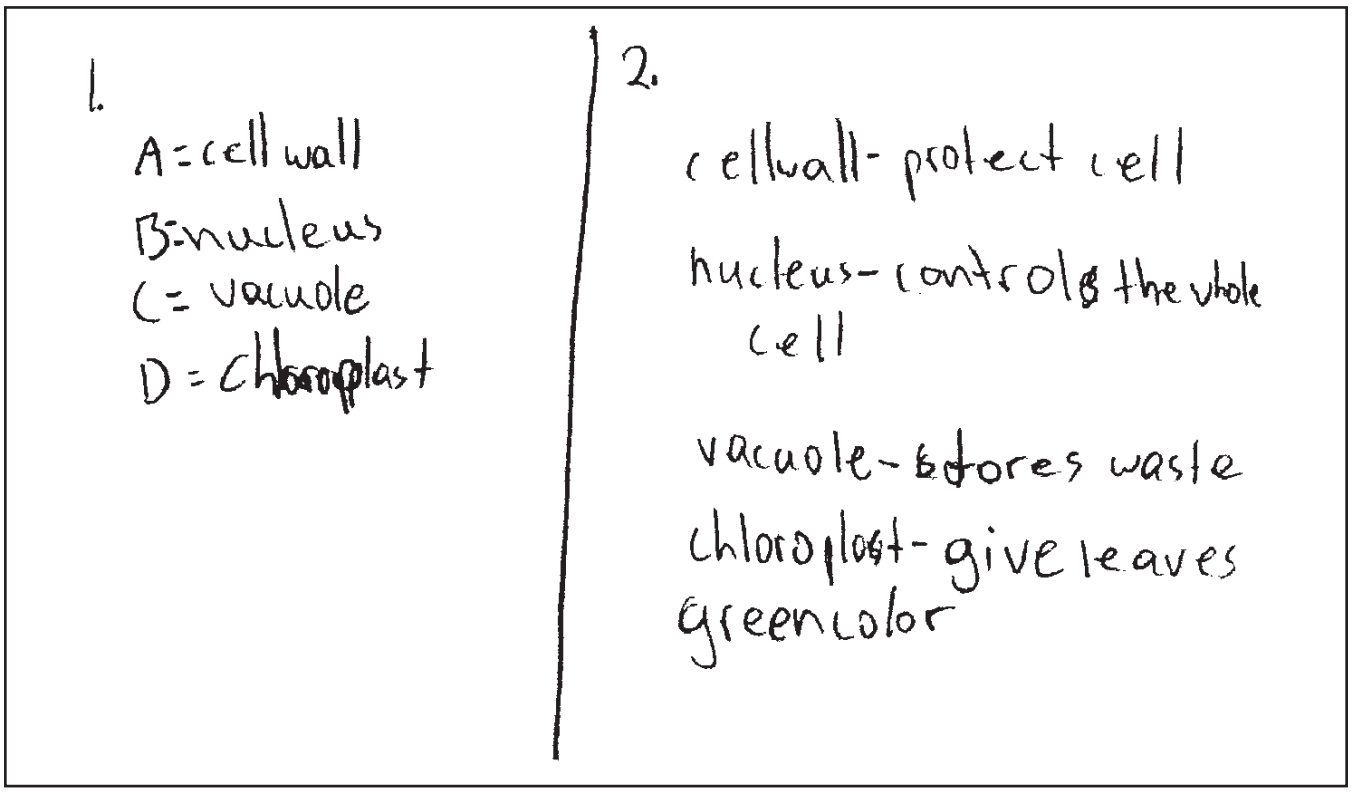
Part 1:

4 correct answers:	"a—cell wall	½
	b—nucleus	½
	c—vacoule	½
	d—chloroplast"	½

Part 2:

4 correct answer:	"a cell wall—to help keep shape of cell (protect it)	½
	b nucleus—'brain of cell'; controls activities	½
	c vacoule—stores food and nutrience for food	½
	d chloroplast—helps turn sunlight into food for the cell."	½

TOTAL POINTS: **4**



SCORE: 3 **Points**

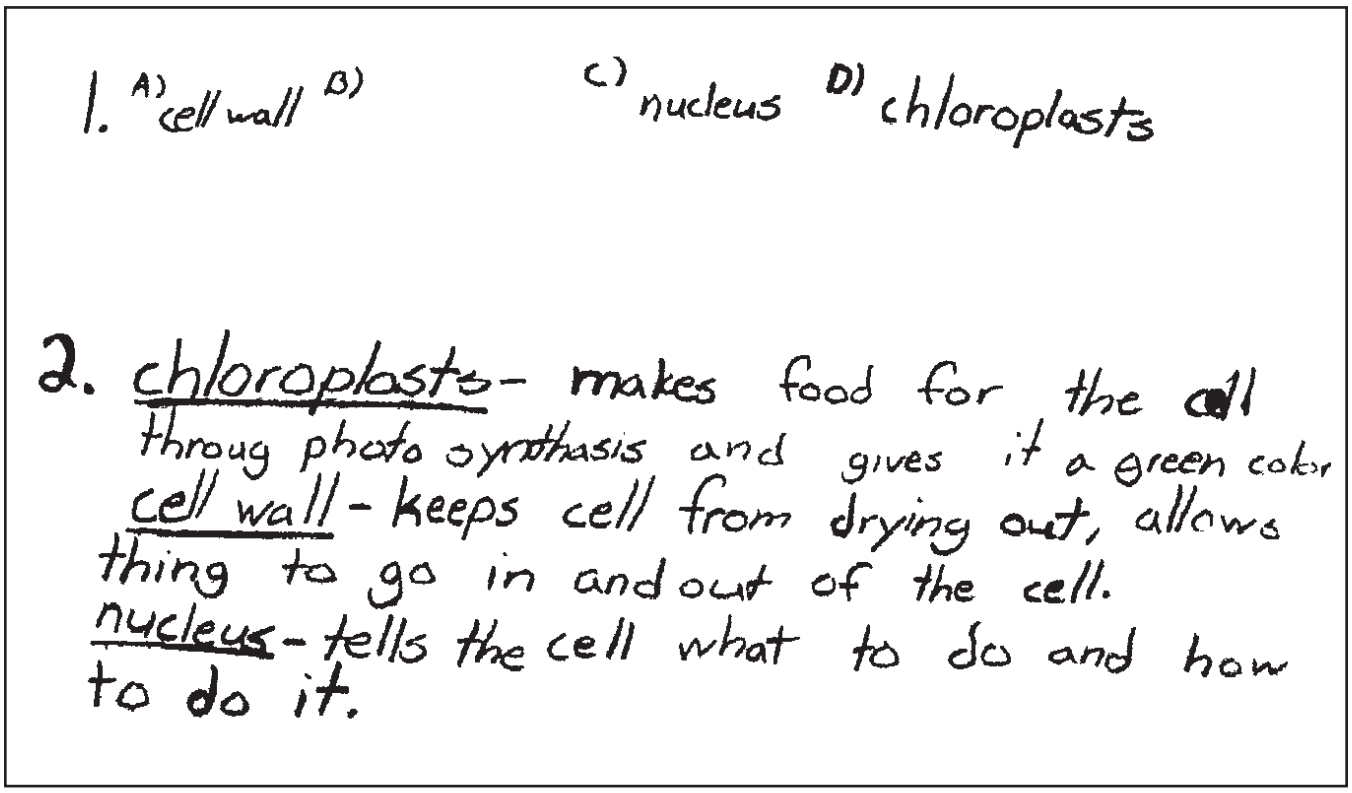
Part 1:

4 correct answers:	"A = cell wall	½
	B = nucleus	½
	C = vacuole	½
	D = chloroplast"	½

Part 2

3 correct answers:	"cellwall—protect cell	½
	nucleus—controls the whole cell	½
	vacuole—stores waste	½
	chloroplast—give leaves green color"	–

TOTAL POINTS: **3 ½**



SCORE: 2 **Points**

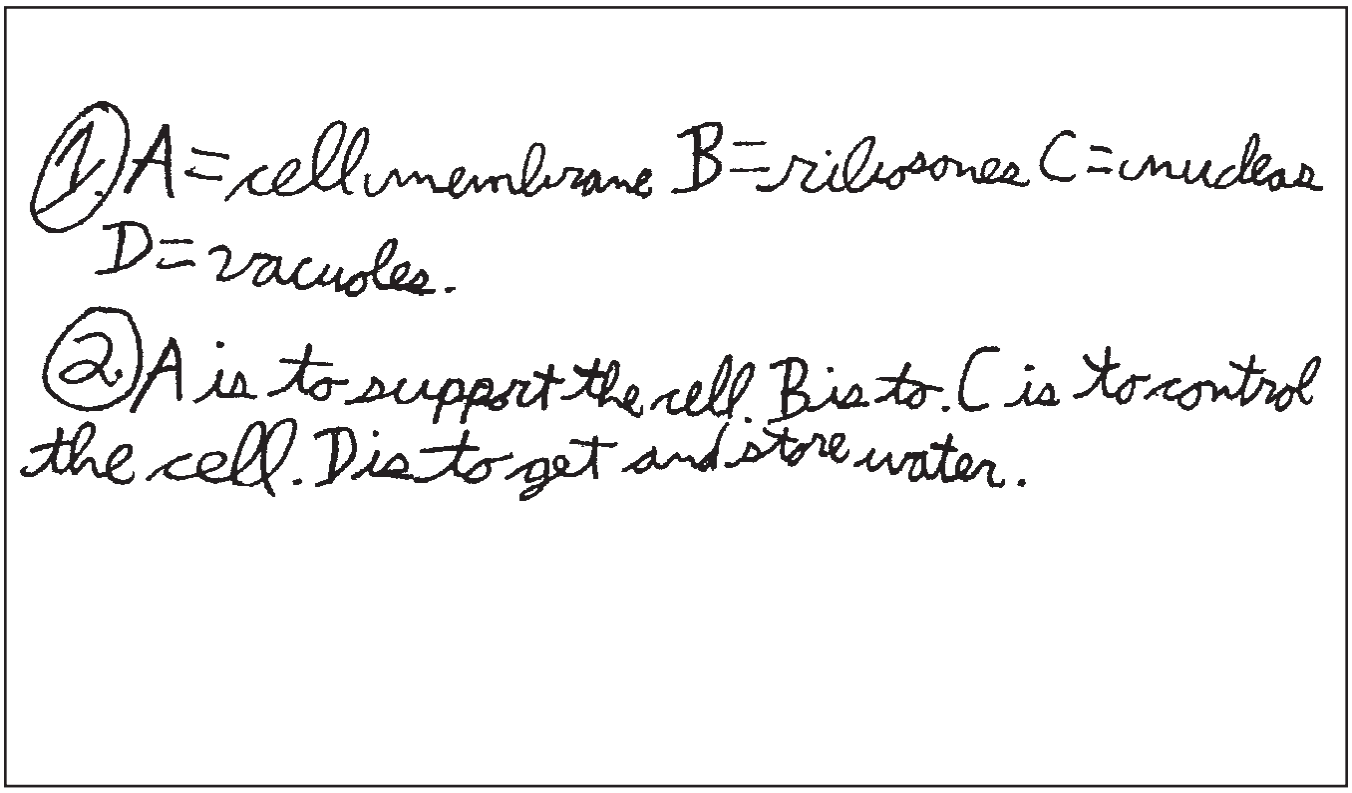
Part 1:

2 correct answers:	"A) cell wall	½
	B)	–
	C) nucleus	–
	D) chloroplasts"	½

Part 2

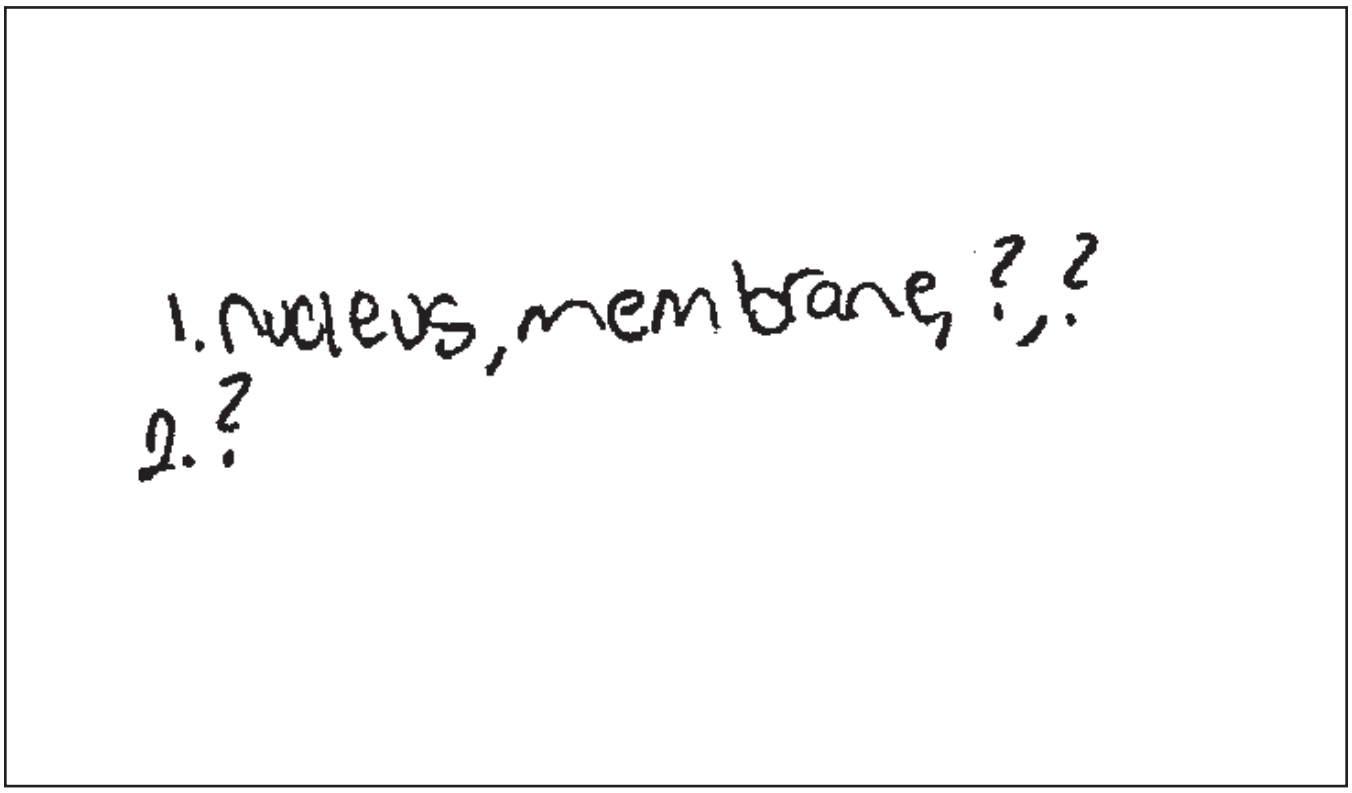
2 correct answers:	"chloroplasts—makes food for the cell throug photo synthasis and gives it a green color	½
	cell wall—keeps cell from drying out, allows thing to go in and out of the cell.	–
	nucleus—tells the cell what do and how to do it."	½
	No attempt at fourth function is shown.	–

TOTAL POINTS: **2**



SCORE: 1

		Points
Part 1:		
0 correct answers:	"A = cell membrane	–
	B = ribosones	–
	C = nucleas	–
	D = vacuoles."	–
Part 2		
3 correct answers:	"A is to support the cell.	½
	B is to.	–
	C is to control the cell.	½
	D is to get and store water."	½
TOTAL POINTS:		**1 ½**



SCORE: 0		**Points**
Part 1:		
0 correct answers:	"nucleus, membrane, ?, ?" "Nucleus" appears in the slot taken to be for Part 1A.	–
Part 2		
0 correct answers:	No attempts made at functions.	–
TOTAL POINTS:		**0**

Science Item D—2007 Benchmark Grade 7

D. You are given a rectangular-shaped object and decide to determine its density two different ways and compare your results. You obtain the following data:

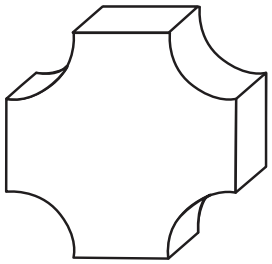
Length (cm)	Width (cm)	Height (cm)	Volume of Water (ml)	Volume of Water and Object (ml)
10	2	3	95	156

The volume of a rectangular prism is $V = l \times w \times h$.

1. What is the volume of the object as determined by using measurements? Show all your work.

2. What is the volume of the object as determined by water displacement? Show all your work.

3. Which method would be the **best** way to find the volume of the object below? Explain your answer.

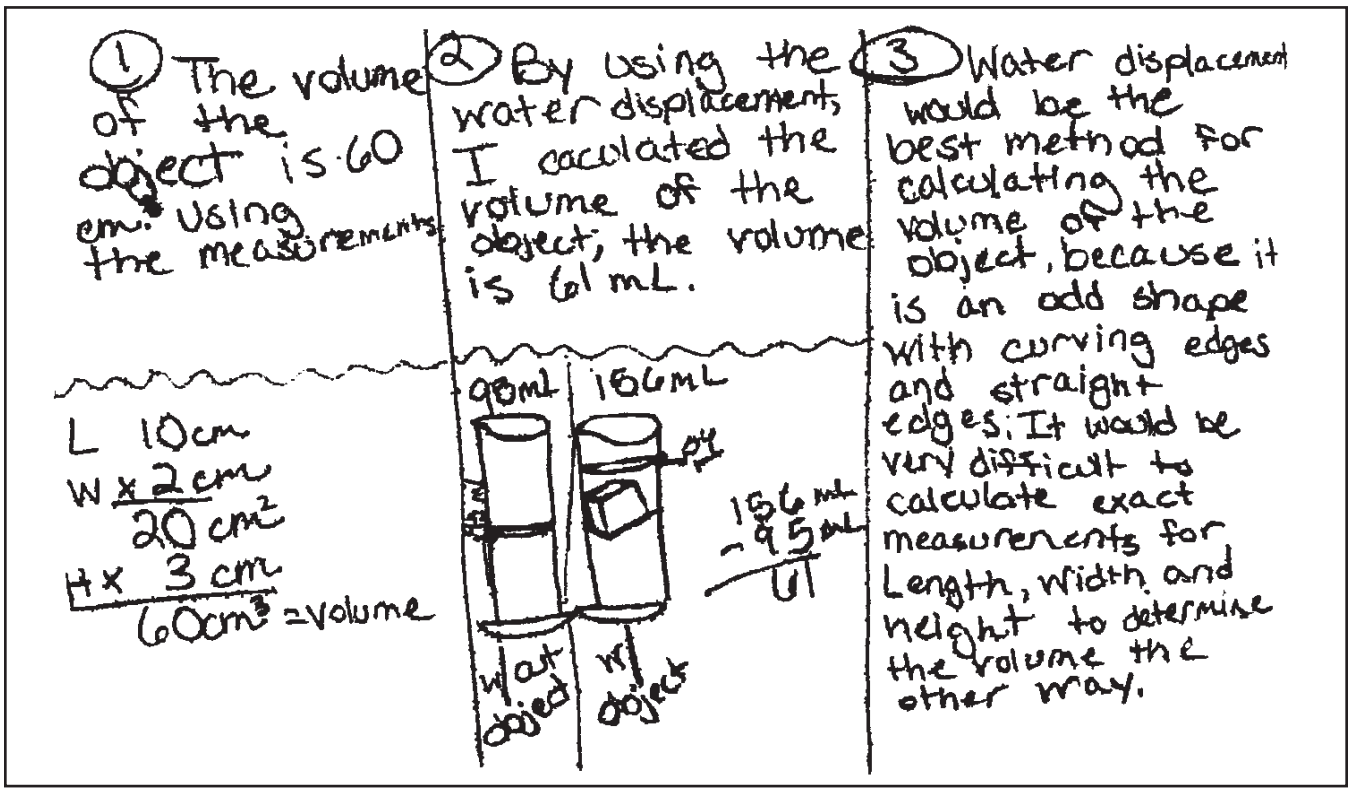


Science Item D Scoring Rubric—2007 Benchmark Grade 7

SCORE	DESCRIPTION
4	The student earns 4 points. The response contains no incorrect work. The response contains the correct label in Part 1 and in Part 2.
3	The student earns 3–3½ points.
2	The student earns 2–2½ points.
1	The student earns ½–1½ points, or some minimal understanding is shown. Ex: Correct answer of "water displacement" in Part 3 with no explanation with no other credit. Correctly using the linear measurements in Part 2 to calculate volume with no other credit.
0	The student earns 0 points. No understanding is shown.
B	Blank—No Response. A score of "B" will be reported as "NA." (No attempt to answer the item. Score of "0" assigned for the item.)

Solution and Scoring

Part	Points
1	**1 point possible** ½ point: **Correct answer: 60 (cubic centimeters).** AND ½ point: **Correct procedure: $10\times 2\times 3$ = answer (or equivalent)** May use grouping 6×10, 20×3, or 2×30 to equal the answer. **Do <u>not</u> give credit for $l\times w\times h$ only.** **Note: Do <u>not</u> give credit for a correct answer for Part 1 that was obtained with an incorrect procedure. Ex: $[10 + 2 + 3]\times 4 = 15\times 4 = 60$ does not receive ½ point for "60."**
2	**1 point possible** ½ point: **Correct answer: 61 (milliliters)** AND ½ point: **Correct procedure: 156 – 95 = answer (or equivalent)** **Do <u>not</u> give credit for a correct answer for Part 2 that was obtained with an incorrect procedure. 95 – 156 = 61 is not a correct procedure and does <u>not</u> receive procedure credit. However, at this level, an answer of 61 obtained from it does earn ½ point.** Due to the wording of the prompt ("determined by measurements"), some students may use the water displacement measurements to calculate the volume in Part 1 rather than the anticipated linear measurements (getting an answer of 61 rather than 60). A student can receive credit for correctly using the volume measurements ("water displacement method") in Part 1 **<u>or</u>** Part 2, but not in both. No credit is earned for using the linear measurements $(l\times w\times h)$ in Part 2.
3	**2 points possible** 2 points: **Correct answer and explanation.** Water displacement because it is not a regularly shaped object **<u>or</u>** because finding its length, width, height (dimensions) would be difficult. (Student response should address the issue of irregular shape or difficult-to-obtain measurements.) OR 1 point: Correct answer and vague/incomplete (but not incorrect) explanation. Do not give credit for a correct answer with an incorrect or no explanation. An answer written as "61^3cm" is considered a labeling error only. ("61^3cm" is 61 x 61 x 61 cm, which would be an incorrect answer. At this level, it is being taken as a label error only—a miswritten form of "cm^3.")



SCORE: 4 **Points**

Part 1:

Correct answer:	60 cm^3	½
Correct procedure:	10 x 2 = 20, 20 x 3 = 60	½

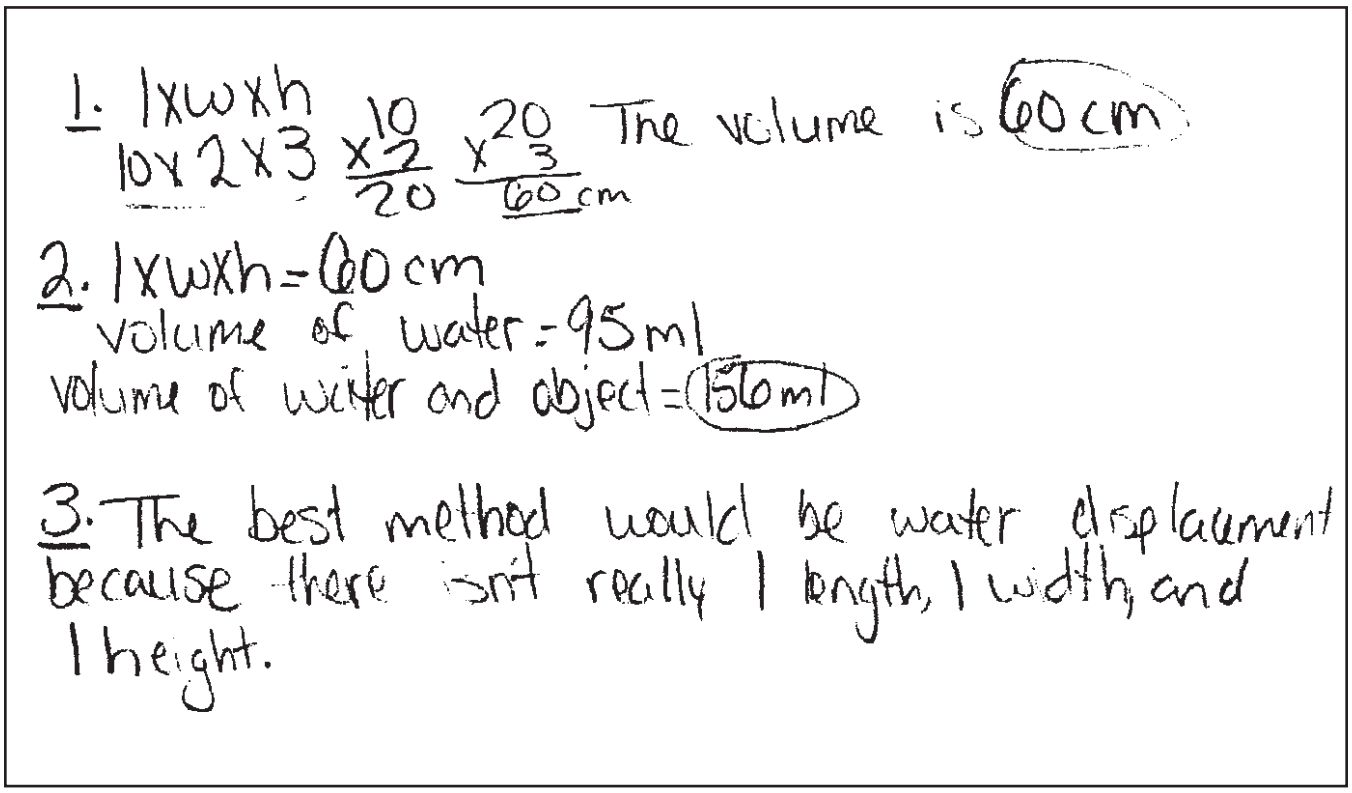
Part 2:

Correct answer:	61 ml	½
	156 – 95 = 61	½

Part 3

Correct answer and explanation:	"Water displacement…odd shape with curving edges…difficult to calculate exact measurements"	2

TOTAL POINTS: **4**



SCORE: 3 **Points**

Part 1:

Correct answer:	60 cm	½
Correct procedure:	10 x 2 x 3, 10 x 2 = 20, 20 x 3 = 60	½

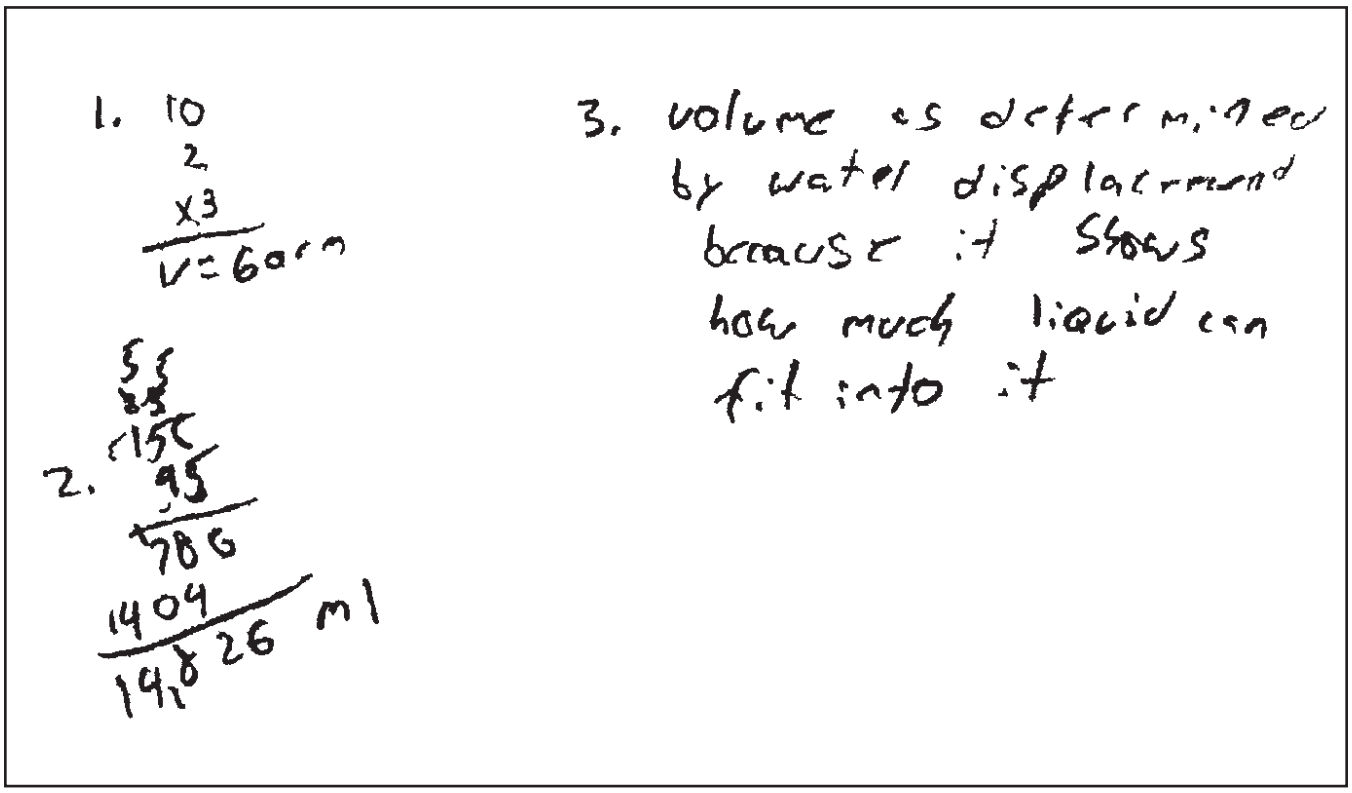
Part 2:

Incorrect answer:	156 ml Circled; repeats prompt, repeats result from Part 1.	–
No procedure evident:		–

Part 3

Correct answer and explanation:	"The best method would be water displacement because there isn't really 1 length, 1 width, and 1 height."	2

TOTAL POINTS: **3**



SCORE: 2 **Points**

Part 1:

Correct answer:	60 cm	½
Correct procedure:	10 x 2 x 3 = 60	½

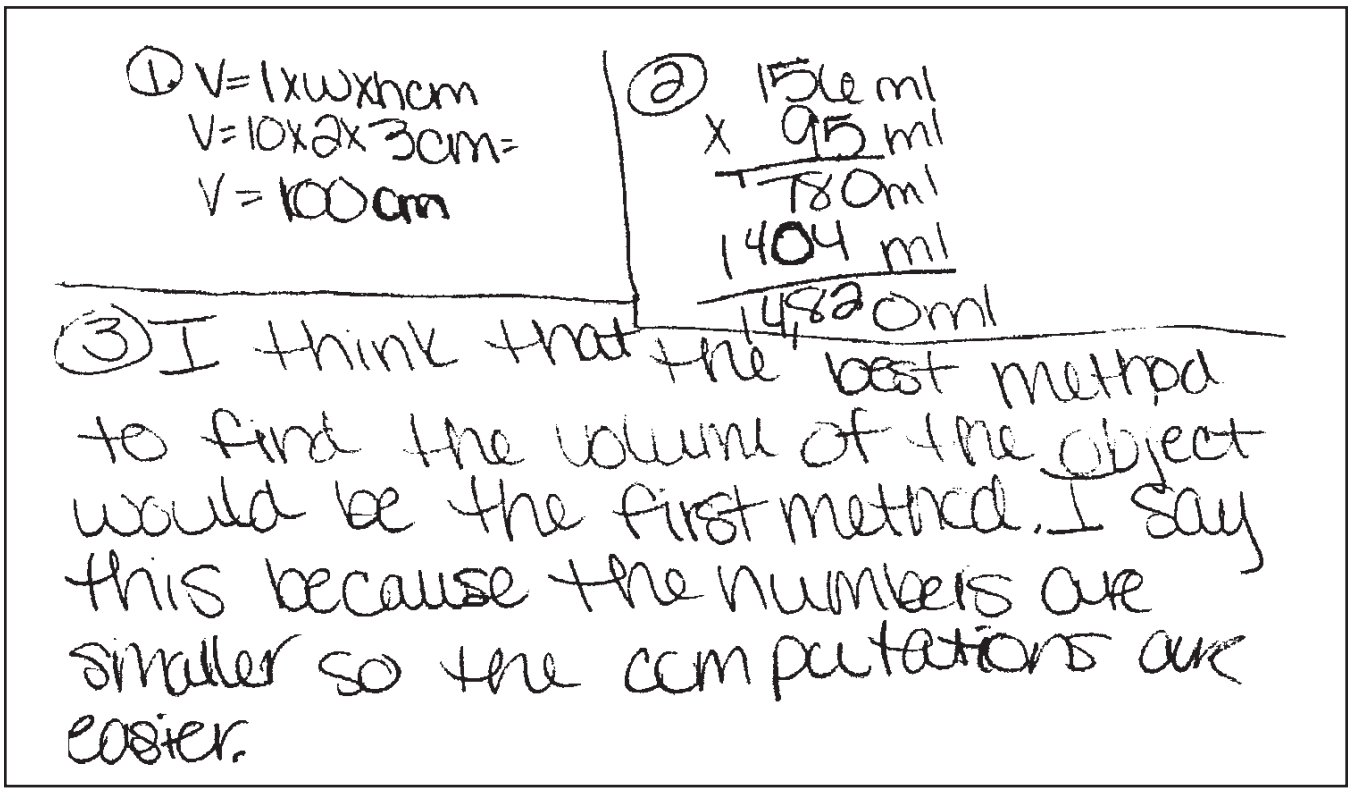
Part 2:

Incorrect answer:	14,826 ml	–
Incorrect procedure:	156 x 95 = 14,826	–

Part 3

Correct answer and vague (but not incorrect) explanation:	"volume is determined by water displacement because it shows how much liquid can fit into it"	1

TOTAL POINTS: **2**



SCORE: 1 **Points**

Part 1:

Incorrect answer:	100 cm	–
Correct procedure:	10 x 2 x 3 = 100	½

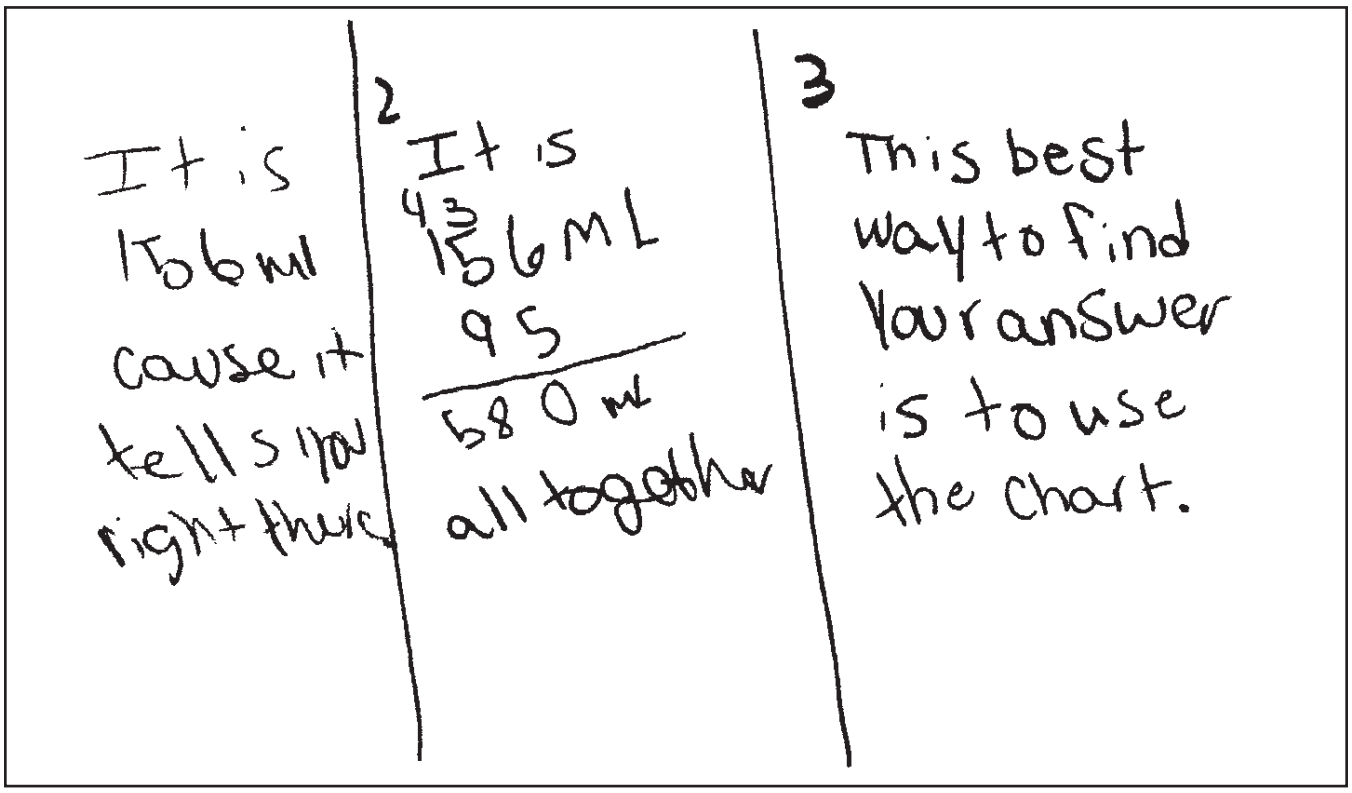
Part 2:

Incorrect answer:	14,820 ml	–
Incorrect procedure:	156 x 95 = 14,820	–

Part 3

Incorrect answer:	"the first method." (linear measurement)	–

TOTAL POINTS: **½**



SCORE: 0 **Points**

Part 1:

Incorrect answer:	156 ml	–
Incorrect procedure:	"it tells you right there."	–

Part 2:

Incorrect answer:	580 ml	–
Incorrect procedure:	156 x 95 = 580	–

Part 3

Incorrect answer:	"use the chart."	–

TOTAL POINTS: **0**

ACTAAP

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