MCAS Grade 7 Mathematics
Computer-Based Practice Test Answer Key

Session 1

CBT Item No.	Standard	Item Type*	Max Points	Correct Answer**
1	7.RP.A.1	SR	1	C
2	7.G.A.3	SR	1	C,E,F
3	7.SP.C.6	SR	1	*See page 2*
4	7.EE.A.1	SR	1	C
5	7.NS.A.3	SR	1	*See page 2*
6	7.SP.C.8	CR	4	*See page 4*
7	7.NS.A.2	SR	1	B
8	7.G.A.1	SR	1	C
9	7.SP.B.4	SR	1	B
10	7.EE.B.4	SA	2	23;D
11	7.NS.A.1	SR	1	*See page 2*
12	7.EE.A.2	SR	1	A
13	7.SP.A.2	SR	1	B
14	7.NS.A.2	SR	1	*See page 2*
15	7.RP.A.1	CR	4	*See page 5*
16	7.EE.B.3	SR	1	C
17	7.NS.A.2	SA	1	1
18	7.SP.A.1	SR	1	A
19	7.EE.B.4	SR	1	*See page 2*
20	7.RP.A.2	SR	1	B

Session 2

CBT Item No.	Standard	Item Type*	Max Points	Correct Answer**
21	7.RP.A.1	SR	1	B
22	7.NS.A.3	SR	1	*See page 3*
23	7.EE.A.1	SR	1	D
24	7.G.B.4	SR	1	D
25	7.EE.B.4	SR	1	B
26	7.SP.C.5	SA	1	$\frac{5}{11}$
27	7.G.B.5	CR	4	*See page 6*
28	7.EE.B.4	SR	1	B
29	7.RP.A.2	SR	1	*See page 3*
30	7.EE.B.3	SR	1	D
31	7.RP.A.2	SA	2	C; $c = 3.5n$ *(or equivalent equation)*
32	7.G.A.2	SR	1	*See page 3*
33	7.EE.B.4	SR	1	A
34	7.SP.C.7	SA	1	$\frac{4}{36}$ *or equivalent*
35	7.EE.B.3	SR	1	D
36	7.NS.A.3	CR	4	*See page 7*
37	7.EE.A.2	SR	1	*See page 3*
38	7.G.B.6	SR	1	B
39	7.EE.A.1	SR	1	*See page 3*
40	7.SP.B.3	SR	1	C,E

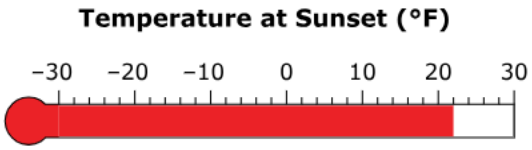
*Mathematics item types are selected-response (SR), short-answer (SA), and constructed-response (CR).

**Answers are provided here for selected-response and short-answer items only. Pages 2 and 3 of this document provide correct answers for technology-enhanced (TE) items. Pages 4–7 provide sample responses and scoring guidelines for constructed-response items.

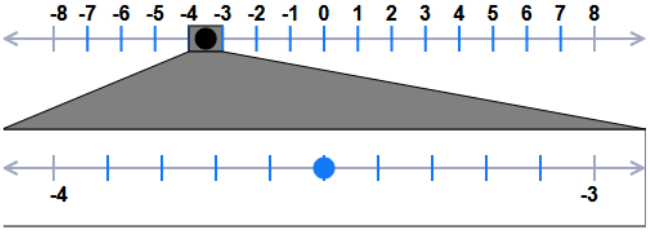
Correct Answer for CBT Item #3: Technology-Enhanced Item

Color	Approximate Number of Times Arrow Will Stop on Given Color
green	100
yellow	75
blue	25

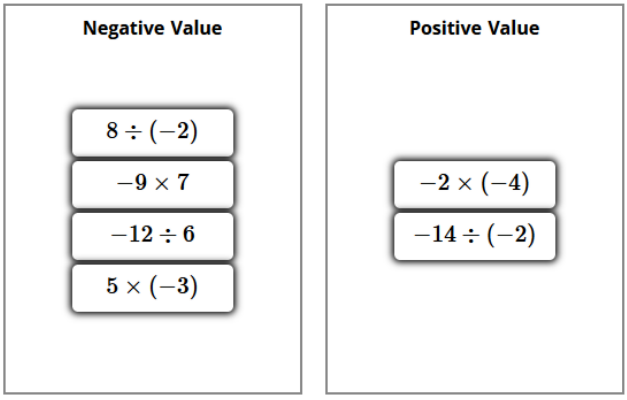
Correct Answer for CBT Item #5: Technology-Enhanced Item



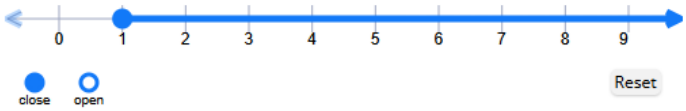
Correct Answer for CBT Item #11: Technology-Enhanced Item



Correct Answer for CBT Item #14: Technology-Enhanced Item



Correct Answer for CBT Item #19: Technology-Enhanced Item



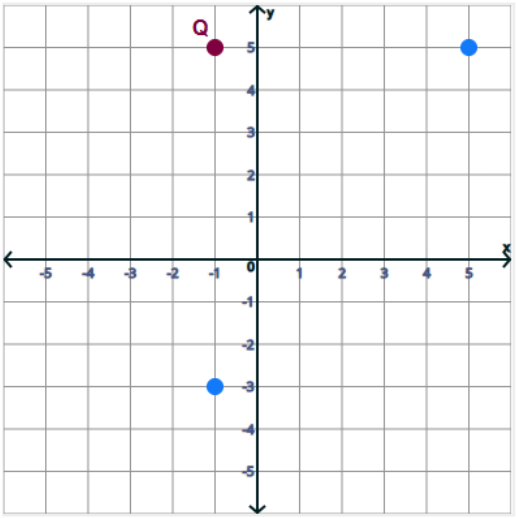
Correct Answer for CBT Item #22: Technology-Enhanced Item

The athlete did 93 sit-ups on the second day and 108 sit-ups on the third day.

Correct Answer for CBT Item #29: Technology-Enhanced Item

Based on the graph, the cost of 4 footballs is $32. The unit rate per football is $8.

Correct Answer for CBT Item #32: Technology-Enhanced Item



Correct Answer for CBT Item #37: Technology-Enhanced Item

Expression	Yes	No
$p - 0.15p$	◉	○
$p - 0.15$	○	◉
$0.15p$	○	◉
$0.85p$	◉	○

Correct Answer for CBT Item #39: Technology-Enhanced Item

$-8x + 2$	$-8x + 4$	$8x - 2$
$2(-4x + 1)$	$-4(2x - 1)$	$3x + (5x - 2)$

Scoring Guide for CBT Item #6: Constructed-Response Item

Score	Description
4	The student response demonstrates an exemplary understanding of the Statistics and Probability concepts involved in finding probabilities of compound events. The student correctly finds probabilities of both simple and compound events and uses them to solve problems.
3	The student response demonstrates a good understanding of the Statistics and Probability concepts involved in finding probabilities of compound events. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result, the response merits 3 points.
2	The student response demonstrates a fair understanding of the Statistics and Probability concepts involved in finding probabilities of compound events. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response demonstrates a minimal understanding of the Statistics and Probability concepts involved in finding probabilities of compound events.
0	The student response contains insufficient evidence of an understanding of the Statistics and Probability concepts involved in finding probabilities of compound events. As a result, the response does not merit any points.

Sample Response:

The following are the most common correct answers. Other versions of the correct answers also receive credit.

Part A

$\frac{1}{6}$ or equivalent value; One out of six possibilities is a 5.

Part B

$\frac{3}{6} = \frac{1}{2}$ or equivalent value; Three out of six numbers on the number cube are odd.

Part C

$\frac{1}{18}$ or equivalent value; One out of 18 possibilities result in rolling a 2 and spinning a green.

Part D

$\frac{6}{18} = \frac{1}{3}$ or equivalent value; Six out of 18 possibilities result in rolling an even number and spinning a color that is not blue.

Scoring Guide for CBT Item #15: Constructed-Response Item

Score	Description
4	The student response demonstrates an exemplary understanding of the Ratios and Proportional Relationships concepts involved in computing unit rates associated with ratios of fractions. The student correctly determines and compares unit rates in a real-world context.
3	The student response demonstrates a good understanding of the Ratios and Proportional Relationships concepts involved in computing unit rates associated with ratios of fractions. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result, the response merits 3 points.
2	The student response demonstrates a fair understanding of the Ratios and Proportional Relationships concepts involved in computing unit rates associated with ratios of fractions. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response demonstrates a minimal understanding of the Ratios and Proportional Relationships concepts involved in computing unit rates associated with ratios of fractions.
0	The student response contains insufficient evidence of an understanding of the Ratios and Proportional Relationships concepts involved in computing unit rates associated with ratios of fractions. As a result, the response does not merit any points.

Sample Response:

The following are the most common correct answers. Other versions of the correct answers also receive credit.

Part A

It would take Hank 15 hours to paint 6 rooms. $6 = 3 \times 2$, so $7\frac{1}{2} \times 2 = \frac{15}{2} \times 2 = 15$ or other mathematically valid work or explanation.

Part B

It takes Hank 2.5 hours to paint one room. $15 \div 6 = 2.5$ or other mathematically valid work or explanation.

Part C

$h = \frac{5}{2}r$ or other mathematically equivalent equation.

Part D

Hank painted 480 rooms. $1200 = \frac{5}{2}r, 2400 = 5r, 480 = r$ or other mathematically equivalent work or explanation.

Scoring Guide for CBT Item #27: Constructed-Response Item

Score	Description
4	The student response demonstrates an exemplary understanding of the Geometry concepts involved in using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
3	The student response demonstrates a good understanding of the Geometry concepts involved in using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result, the response merits 3 points.
2	The student response demonstrates a fair understanding of the Geometry concepts involved in using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response demonstrates a minimal understanding of the Geometry concepts involved in using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
0	The student response contains insufficient evidence of an understanding of the Geometry concepts involved in using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. As a result, the response does not merit any points.

Sample Response:

The following are the most common correct answers. Other versions of the correct answers also receive credit.

Part A

$5x + 40 = 90$; Complementary angles add to $90°$. The angles must be complementary because they form a straight line with the angle marked as a right angle. OR $5x + +90 + 40 = 180$; Straight angles add up to $180°$. The angles form a straight line.

Part B

10; $5x = 50$; $x = 10$

Part C

$3y + 1 = 40$; Vertical angles have equal measures.

Part D

13; $3y + 1 = 40$; $3y = 39$; $y = 13$

Scoring Guide for CBT Item #36: Constructed-Response Item

Score	Description
4	The student response demonstrates an exemplary understanding of the Number System concepts involved in solving real-world and mathematical problems involving the four operations with integers and other rational numbers. The student correctly converts between cups, tablespoons, and fluid ounces, to determine the number of servings needed for a given recipe.
3	The student response demonstrates a good understanding of the Number System concepts involved in solving real-world and mathematical problems involving the four operations with integers and other rational numbers. Although there is significant evidence that the student was able to recognize and apply the concepts involved, some aspect of the response is flawed. As a result, the response merits 3 points.
2	The student response demonstrates a fair understanding of the Number System concepts involved in solving real-world and mathematical problems involving the four operations with integers and other rational numbers. While some aspects of the task are completed correctly, others are not. The mixed evidence provided by the student merits 2 points.
1	The student response demonstrates a minimal understanding of the Number System concepts involved in solving real-world and mathematical problems involving the four operations with integers and other rational numbers.
0	The student response contains insufficient evidence of an understanding of the Number System concepts involved in solving real-world and mathematical problems involving the four operations with integers and other rational numbers. As a result, the response does not merit any points.

Sample Response:

The following are the most common correct answers. Other versions of the correct answers also receive credit.

Part A

5 fluid ounces of vinegar. $\frac{5}{8}$ cups $\times$ 8 fluid ounces per cup = 5 fluid ounces

Part B

17.5 fluid ounces. Oil: 1 cup = 8 fluid ounces (from the conversion chart); vinger: : $\frac{5}{8}$ cup x 8 fluid ounces per cu= 5 fluid ounces; honey: $\frac{1}{2}$ cup $\times$ 8 fluid ounces per cup = 4 fluid ounces; mustard: if 1 fluid ounce = 2 tablespoons (from the conversion chart), then 1 tablespoon = $\frac{1}{2}$ fluid ounce; $8 + 5 + 4 + \frac{1}{2} = 17\frac{1}{2}$ fluid ounces.

Part C

$17\frac{1}{2} \cdot 2 = 35$ tablespoons; $35 \div 3 = 11\frac{2}{3}$ or 11 full servings OR equivalent