MCAP Maryland Comprehensive Assessment Program

Practice Test Answer and Alignment Document
Mathematics: Grade 8
Online

The following pages include the answer keys for all machine-scored items. A sample student response for the top score is included for all hand-scored constructed response items.

- Some answer keys include one possible sample student response. Other valid methods for solving the problem can earn full credit unless a specific method is required by the item.

- In items where the scores are awarded for full and partial credit, the definition of partial credit will be confirmed during range-finding (reviewing sets of real student work).

- If students make a computation error, they can still earn points for reasoning or modeling.

Section 1

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	C	8.F.B.4
2.	The following angles should be selected: The angle vertical to angle 1. The corresponding angle to angle 1. The angle vertical to this corresponding angle.	8.G.A.5
3.	B	8.M.1 8.EE.B.5-1 8.M.1a
4.	The equation $9x + 7 = 8x + 7$ has exactly one solution. The equation $8x + 7 = 8x + 7$ has infinitely many solutions. The equation $9x + 5 = 9x + 7$ has no solution.	8.EE.C.7a

Item Number	Answer Key	Evidence Statement Key/ Content Scope
5.	**<u>Sample Top Score Response</u>** The length of leg *PQ* can be found using $\sqrt{3^2 + 4^2}$, which is equal to 5 units. The length of leg *QR* can be found using $\sqrt{6^2 + 8^2}$, which is equal to 10 units. It is given that the length of hypotenuse *PR* is $\sqrt{125}$ units. Then, using the Pythagorean Theorem where $a = 5$ and $b = 10$ to verify that triangle *PQR* is a right triangle: $a^2 + b^2 = c^2$ $5^2 + 10^2 = c^2$ $25 + 100 = c^2$ $125 = c^2$ $\sqrt{125} = c$ Since $c = \sqrt{125}$ and $PR = \sqrt{125}$, triangle *PQR* is a right triangle. **Refer to the Holistic Rubric for 3-Point Reasoning Constructed Response Items for score point information.**	8.R.3d 8.G.B.7 8.G.B.8
6.	A, B, E	8.NS.A.1
7.	D	8.M.1 8.EE.C.8a 8.M.1d
8.	40	8.EE.A.3
9.	The slope of the graph of function J is [greater than] the slope of the graph of function K. The *y*-intercept of the graph of function J is [less than] the *y*-intercept of the graph of function K.	8.F.A.2

Section 2

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	B	8.EE.B.6-1
2.	The solution is [(2, 7)] because the solution to the system must [satisfy both equations simultaneously].	8.EE.C.8a
3.	B, D, E	8.R.2a 8.F.A.3-1
4.	D	8.NS.A.2
5.	**Sample Top Score Response** **Part A:** $d^2 = \dfrac{1}{36}$ $d = \sqrt{\dfrac{1}{36}}$ $d = \dfrac{1}{6}$ **Part B:** $v = d^3$ $v = \left(\dfrac{1}{6}\right)^3$ $v = \dfrac{1}{216}$ **Refer to the Holistic Rubric for 4-Point Modeling Constructed Response Items for score point information.**	8.M.1 8.EE.A.1 8.M.1b 8.M.1c
6.	D	8.SP.A.2
7.	A	8.R.1d 8.EE.C.8c
8.	16	8.EE.C.7b
9.	$\dfrac{180}{181}$	8.G.B.7

Section 3

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	D	8.G.C.9
2.	([−4], [3])	8.EE.C.8b-1
3.	18	8.M.1 8.G.B.7 8.M.1a 8.M.1b 8.M.1c
4.	B	8.EE.A.2
5.	**Sample Top Score Response** **Part A:** Linda's claim is incorrect because she said the slope is run over rise. The slope is actually rise over run or the change in *y* over the change in *x*. The slope of $\overline{PR}$ is $-\frac{2}{3}$ because $\frac{3-(-1)}{-3-3} = \frac{4}{-6} = -\frac{2}{3}$. **Part B:** Triangles *MNP* and *QRT* are similar because the corresponding angles at *N* and *R* and the corresponding angles at *P* and *T* are congruent, since they are corresponding angles where two parallel lines are intersected by a transversal. Because the triangles are similar, the ratios of corresponding sides of the triangles are equal. This means $\frac{MN}{MP} = \frac{QR}{QT}$, and shows that the slopes of *NP* and *RT* are equal. **Refer to the Holistic Rubric for 4-Point Reasoning Constructed Response Items for score point information.**	8.R.1e 8.EE.B.6-1

Item Number	Answer Key	Evidence Statement Key/ Content Scope
6.	A	8.F.B.5-1
7.	$\begin{cases} 10x + 12y = 80 \\ \ 3x + 4y = 26 \end{cases}$ or $\begin{cases} \ 3x + 4y = 26 \\ 10x + 12y = 80 \end{cases}$	8.M.1 8.EE.C.8c 8.M.1b
8.	The total amount raised from selling 40 key chains is [less] than the total amount raised from selling 40 coffee cups by [2] dollars.	8.EE.B.5-2

Section 4

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	2.5	8.EE.C.8c
2.	B	8.G.A.1a
3.	The equation of the line is $[y = -\frac{7}{2}x + 7]$ because the slope of the line is $[-\frac{7}{2}]$, and the *y*-intercept is [7]. The coordinates of the ordered pairs on the line [always] satisfy the equation.	8.R.1a 8.EE.B.6-2
4.	A, C, E	8.F.A.1-1
5.	**<u>Sample Top Score Response</u>** Let *d* represent the number of days student K reads. The number of pages student J reads is $20d + 40$ and the number of pages student K reads is $30d$. The equation $20d + 40 = 30d$ could be used to determine the number of days after student J starts reading when both students have read the same number of pages. Solving for *d* results in $d = 4$, which means the students will have read the same number of pages 4 days after student K starts reading. **Refer to the Holistic Rubric for 3-Point Modeling Constructed Response Items for score point information.**	8.M.1 8.EE.C.7b 8.M.1b 8.M.1c
6.	C	8.EE.A.1
7.	D	8.R.3b 8.G.A.5

Item Number	Answer Key	Evidence Statement Key/ Content Scope
8.	Two of the following points should be plotted: (−9, 2), (−6, 1), (−3, 0), (0, −1), (3, −2), (6, −3), (9, −4)	8.F.A.3-1
9.	The numbers in the row labeled "Hood" should be 100 for green, 70 for purple, and 170 for the total. The numbers in the row labeled "No Hood" should be 80 for green, 130 for purple, and 210 for the total. The numbers in the row labeled "Total" should be 180 for green, 200 for purple, and 380 for the total.	8.SP.A.4