Practice Test Answer and Alignment Document
Mathematics – Grade 8
Pencil-and-Paper

MCAP Maryland Comprehensive Assessment Program

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.	A	8.F.B.5-1
2.	C	8.EE.A.2
3.	B	8.G.A.1a
4.	C	8.F.A.3-1
5.	B	8.NS.A.1
6.	D	8.EE.C.7a
7.	B	8.SP.A.1
8.	40	8.EE.A.3
9.	A	8.EE.A.1
10.	C	8.G.A.3
11.	A	8.EE.C.8a

Item Number	Answer Key	Evidence Statement Key/Content Scope
12.	D	8.NS.A.2
13.	16	8.EE.C.7b
14.	A, C, E	8.F.A.1-1

Section 2

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	D	8.M.5 8.EE.C.8a
2.	C	8.G.B.7
3.	B, D, E	8.R.2a 8.F.A.3-1

Item Number	Answer Key	Evidence Statement Key/ Content Scope
4.	**<u>Sample Top Score Response</u>** System J can be solved using the substitution method since the second equation is already solved for y. $2x + 5(\text{-}1) = 16$ $2x - 5 = 16$ $2x = 21$ $x = 10.5$ System K can be solved by multiplying the first equation by -2 so that the coefficients of the x terms are opposite numbers. $-2(3x + 4y) = -2(10)$ $-6x - 8y = -20$ Substituting this equation for the first equation, System K then becomes $\begin{cases} -6x - 8y = -20 \\ 6x + 8y = 5 \end{cases}$. The next step is to add the left sides of the two equations and add the right sides of the two equations and set the sums equal. $-6x - 8y + (6x + 8y) = -20 + 5$ $-6x - 8y + 6x + 8y = -15$ $-6x + 6x - 8y + 8y = -15$ $0 + 0 = -15$ $0 = -15$ Since the resulting equation has no variables and is a false statement, this means System K has no solution. **Refer to the Holistic Rubric for 4-Point Reasoning Constructed Response Items for score point information.**	8.R.1c 8.EE.C.8b-1 8.EE.C.8b-3
5.	C	8.F.B.4

Item Number	Answer Key	Evidence Statement Key/ Content Scope
6.	B	8.M.3 8.EE.C.8c
7.	A	8.EE.B.5-1

Section 3

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	B	8.M.2 8.EE.B.5-1
2.	12	8.G.C.9
3.	**<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
4.	B	8.F.A.2

Item Number	Answer Key	Evidence Statement Key/ Content Scope
5.	2.5	8.EE.C.8c
6.	**<u>Sample Top Score Response</u>** The length of leg PQ can be found by using $\sqrt{3^2+4^2}$, which is equal to 5 units. The length of leg QR can be found by 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.	8.R.3d 8.G.B.7 8.G.B.8
7.	D	8.R.1a 8.EE.B.6-2

Section 4

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	C	8.SP.A.4
2.	A	8.EE.C.8b-1
3.	A	8.R.1d 8.EE.C.8c
4.	**Sample Top Score Response** For company A, the hourly rate is $\dfrac{(150-60)}{(2-0)} = \dfrac{90}{2} = 45$ dollars, and the one-time delivery fee is 60 dollars. For company B, the hourly rate is $\dfrac{(240-40)}{(4-0)} = \dfrac{200}{4} = 50$ dollars, and the one-time delivery fee is 40 dollars. To determine which company offers the better price for renting a waterslide for 6 hours, I multiplied the hourly rate by 6 hours and added the one-time delivery fee. For company A, the calculation for the total cost is 45(6) + 60, which results in $330. For company B, the calculation for the total cost is 50(6) + 40, which results in $340. Company A offers a better price for renting a waterslide for 6 hours because they are $10 less expensive. **Refer to the Holistic Rubric for 4-Point Modeling Constructed Response Items for score point information.**	8.M.1 8.F.B.4
5.	18	8.M.4 8.G.B.7
6.	B	8.EE.B.6-1

Item Number	Answer Key	Evidence Statement Key/ Content Scope
7.	D	8.R.3b 8.G.A.5