Illinois MATH Assessment

Practice Item Answer Key

Grade 8 – Online, Text-to-Speech

The following pages include the answer key for all machine-scored items, followed by a sample response for the hand-scored item.

- The rubrics show sample student responses. Student responses other than that shown in the rubric may earn full or partial credit.
- Which responses to hand-scored items receive full or 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.

Item Number	Answer Key
1.	**Student response is 3^2 in row 1, $\frac{1}{3^1}$ in row 2, and 3^1 in row 3.**
2.	**B**
3.	**See Rubric**
4.	**A,E**
5.	**Student response is No Solution in row 1, Infinitely Many Solutions in row 2, and One Solution in row 3.**
6.	**Part A: DD1 – rotation, DD2 – equal to** **Part B: C**
7.	**Student response is 300.**
8.	**A,B,D**
9.	**See Rubric**
10.	**Student response is 14.1.**
11.	**Part A: C** **Part B: Student response is 22.5.**
12.	**See Rubric**
13.	**Student response is a line that passes through (0, 0) and (10, 1).**
14.	**Part A: D** **Part B: 16.5**

15.	**See Rubric**
16.	**Part A: C** **Part B: 6**

ILLINOIS Assessment of Readiness

Rubrics

#3 Rubric	
Equation Editor Rubric Scoring Testing is Available in ABBI.	
Score	**Description**
1	Student response is $\frac{-4}{13}$. Note: • Equivalent values are acceptable. Rationale: Multiply both sides of the equation by 2 to clear the fraction. $2\left[\frac{y}{2} - 6 = -2(3y + 4)\right]$ $y - 12 = -4(3y + 4)$ Distribute -4 to the terms inside the parentheses. $y - 12 = -12y - 16$ Add $12y$ on both sides of the equation to cancel out the variables on the right side. $13y - 12 = -16$ Add 12 on both sides of the equation to cancel out the constants on the left side. $13y = -4$ Divide by 13 to solve for y. $y = \frac{-4}{13} = -\frac{4}{13}$ A fraction is another way to represent division, so leave your answer as a fraction for the most precise answer.
0	Student response is incorrect or irrelevant.

#9 Rubric	
Analytic Rubric	
Score	**Description**
3	Student response includes each of the following 3 elements: • **Modeling component** = 1 point: Correct work or explanation to determine the area of the cake pan, 96 square inches • **Computation component** = 1 point: Valid estimate for the bake time of Tyrell's cake, acceptable range 24-27 minutes • **Modeling component** = 1 point: Correct work or explanation to determine the area of the cake pan Sample Student Response: First, calculate the area of the trapezoid using the equation. $A = \frac{1}{2}(b_1 + b_2)h = \frac{1}{2}(6 + 18)8 = \frac{1}{2}(24)8 = 96$ square inches. To estimate the bake time, I can calculate the area of the other pans given and use those to estimate the bake time for Tyrell's cake pan. The 13 inches by 9 inches cake pan has an area of 13×9=117 square inches, and a bake time of 30-32 minutes. The 9 inches by 9 inches cake pan has an area of 9×9=81 square inches, and a bake time of 20-22 minutes. The 8 inches by 8 inches cake pan has an area of 8×8=64 square inches, and a bake time of 18-20 minutes. I noticed that the rough relationship between area and minimum bake time is $minimum\ bake\ time = \frac{area}{4}$, so, the bake time of Tyrell's cake would be $\frac{96}{4} = 24$ minutes. Or other valid approaches are acceptable, such as Sample Student Response: The area of the trapezoid can be calculated by adding the shorter base and longer base together, dividing those by 2, and multiplying by the height. 6+18=24, divided by 2 is 12, times 8 is 96 square inches.

	The first pan has an area of 117 square inches and a bake time of 30-32 minutes. $\frac{30}{117} \approx 0.256$ and $\frac{32}{117} \approx 0.274$, so the bake time for that cake is about 0.26 minutes per square inch of cake. The second pan has an area of 81 square inches and a bake time of 20-22 minutes. $\frac{20}{81} \approx 0.25$ and $\frac{22}{81} \approx 0.27$, so the bake time for that cake is also about 0.26 minutes per square inch of cake. Since the trapezoid cake pan has a base area of 96 square inches, $0.26 \times 96 = 24.96$. The cake will take about 25 minutes to bake. Or other valid approaches are acceptable.
2	Student response includes 2 of the above elements.
1	Student response includes 1 of the above elements.
0	The response is incorrect or irrelevant.

#12 Rubric	
Analytic Rubric	
Score	**Description**
3	Student response includes the following elements: • **Reasoning component** = 1 point: Valid explanation of the flaw in the student's reasoning. • **Computation component** = 1 point: Correct measure of $\angle Q$, 30°.

	• **Reasoning component** = 1 point: Valid work or explanation of how to determine that $m\angle Q = 30°$. Sample Student Response: The student is wrong because they did not allow for the fact that the rules of parallel lines can be used in this problem. So, even though the measure of only one angle inside the triangles is given, you can find the measure of a second angle using the rules of parallel lines. I know that the measure of $\angle NPR$ is $85°$. Since line segment NP is a transversal, I know that $\angle NPR$ and $\angle MNP$ are alternate interior angles and are therefore congruent. I also know that the measure of $\angle M$ is $65°$. Since $\angle MNP$, $\angle M$, and $\angle NPM$ make up a triangle, I know that the measure of $\angle NPM$ equals $30°$ since $180 - 65 - 85 = 30$. Since the triangles are similar, $\angle NPM$ corresponds to $\angle Q$. So, the measure of $\angle Q$ equals $30°$. Or other valid approaches are acceptable. Or valid and accurate representation using the drawing tool will be considered correct. Student's answer may appear in the drawing box or in the text box or in any combination of the two.
2	Student response includes 2 of the 3 elements.
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.

#15 Rubric	
Holistic Rubric	
Score	**Description**
4	Student response includes the following elements: • **Computation component** = 1 point: Correct value for the number of bowls Lorenzo sold, 8 • **Computation component** = 1 point: Correct value for the number of vases Lorenzo sold, 10 • **Reasoning component** = 2 points: Valid work or explanation with equations for the number of bowls and vases sold Student response is completely correct and shows a thorough understanding. Sample Student Response: v = the number of vases b = the number of bowls Given equation: $v + b = 18$ Other equation: $12v + 8b = 184$ Solve the first equation for v: $v = 18 - b$ Plug into the other equation for v: $12(18 - b) + 8b = 184$ $216 - 12b + 8b = 184$ $216 - 4b = 184$ $-4b = -32$ $b = 8$ Lorenzo sells 8 bowls. Plug into either equation and solve for v. $v + 8 = 18$ $v = 10$ Lorenzo sells 10 vases.

	Or other valid response.
3	Student response demonstrates both general achievement of the elements of the task and a less than thorough understanding.
2	Student response demonstrates both limited achievement of the elements of the task and a limited understanding.
1	Student response demonstrates both minimal achievement of the elements of the task and a minimal understanding.
0	Student response does not achieve any elements of the task or demonstrate any understanding.