ILLINOIS Assessment of Readiness

Illinois MATH Assessment

Practice Item Answer Key

Grade 8

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.	**C,A**
2.	**Student responses are increasing, constant, decreasing.**
3.	**Student response is 1, 2, or 3 in gap1 and 4 in gap2.**
4.	**A**
5.	**Student response is 8.**
6.	**Student response is "Function" for Sets A and C and "Not a Function" for Set B.**
7.	**D**
8.	**Student response is 6.**
9.	**C**
10.	**D, A**
11.	**Student response is the point at 2.**
12.	**See Rubric**
13.	**See Rubric**
14.	**See Rubric**
15.	**On Graph 1, (3, 1), (7, 1), (9, -2), (3, -2) must be plotted, and the shape must be closed.**
16.	**See Rubric**
17.	**D**

18.	**Seev Rubric**
19.	**A**
20.	**A,D,C**
21.	**Student response is 17.**
22.	**The slope of the line represented by the function is 4. The value of the function when x = 0 is −1.**
23.	**Part A: Student response is "4x+7=3x-1" and "only points on a straight line"** **Part B: Student response is 3.**
24.	**Part A: B** **Part B: The y-intercept of the equation represents that at 0 minutes, the player has 254 points.**
25.	**C**
26.	**See Rubric**
27.	**See Rubric**

#12 Rubric	
Score	**Description**
3	Student response includes the following elements. • **Computation component** = 1 point: Identify how much faster Bryce is traveling • **Modeling component** = 1 point: Explain how to determine Lydia's rate of speed • **Modeling component** = 1 point: Explain how to determine Bryce's rate of speed Sample Student Response: Lydia travels 3 miles ÷ 18 minutes, or 1 mile in 6 minutes. The slope of the equation is 5, so Bryce travels 1 mile in 5 minutes. Bryce is riding his bike at a faster rate. Bryce is riding his bike 6 – 5 = 1 minute faster per mile. Or other valid approaches are acceptable.
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.

#13 Rubric	
Score	**Description**
3	Student response includes the following elements. • **Reasoning component** = 1 point: Explains why the Pythagorean Theorem can be used to find the distance between the two points in the coordinate plane • **Modeling component** = 1 point: Correct equation that can be used to find the distance between the two points in the coordinate plane

	• **Computation component** = 1 point: Correct distance between the two points in the coordinate plane Sample Student Response: The Pythagorean Theorem can be used to find the distance between the two points in the coordinate plane because a right triangle can be formed with the two given points as the hypotenuse. A right triangle formed by the two given points has leg lengths of 5 units and 7 units. So, the equation is $5^2 + 7^2 = c^2$, where c is the distance between two points in the coordinate plane. Solving the equation $5^2 + 7^2 = c^2$ for c gives $c=74--\sqrt{}c=74$, so the distance between two points in the coordinate plane is $74--\sqrt{}74$ units. Or other valid approaches are acceptable.
2	Student response includes 2 of the 3 elements.
1	Student response includes 1 of the 3 elements.

#14 Rubric

Score	Description
1	Student response is graphing the line $y = 2/5x$. Rationale: Juanita uses 5 quarts of blue paint for every 2 quarts of red paint, so graph a point at (5, 2) and a point at (10, 4). Then connect the points.
0	The response is incorrect or irrelevant.

#16 Rubric

Score	Description
3	Student response includes the following elements. • **Reasoning component** = 1 point: Explains how to use the two given interior angle

	measures to find the measure of the missing exterior angle • **Reasoning component** = 1 point: Explains how to use the missing interior angle measure to find the measure of the missing exterior angle • **Computation component** = 1 point: Correct measure of the missing exterior angle Sample Student Response: The sum of the two given interior angle measures is equal to the measure of the missing exterior angle. So, the measure of the missing exterior angle is 84° + 52°, or 136°. The sum of the angle measures in a triangle is 180°. So, the missing interior angle measure is 180° – (84° + 52°), or 44°. The measure of the missing exterior angle and the measure of the missing interior angle have a sum of 180° since they form a straight line. So, the measure of the missing exterior angle is 180° – 44°, or 136°. Or other valid approaches are acceptable.
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.

#18 Rubric

3 Point Constructed Response Rubric – Part A

Score	Description
3	Student response includes the following elements. • **Modeling component** = 1 point: Correct expression to determine the distance Javier threw his baseball • **Computation component** = 1 point: Correct distance Javier threw his baseball • **Modeling component** = 1 point: Correct work shown Sample Student Response: Maria threw the baseball 75 feet. Alex threw the baseball a distance 10.5 feet shorter than

	the distance Maria threw the baseball. David threw the baseball 12.75 feet farther than Alex did. Jackie threw the baseball 1.6 times as far as David did. So, the expression [(75 – 10.5) + 12.75] × 1.6 can be used to determine the distance Jackie threw the baseball. Jackie threw the baseball [(75 – 10.5) + 12.75] × 1.6 = (64.5 + 12.75) × 1.6 = 77.25 × 1.6 = 123.6 feet. Or other valid approaches are acceptable.
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.

3 Point Constructed Response Rubric – Part B

Score	Description
3	Student response includes the following elements. • **Modeling component** = 1 point: Correct expression to determine the height Javier kicked his football into the air • **Computation component** = 1 point: Correct distance Javier kicked his football into the air • **Modeling component** = 1 point: Correct work shown Sample Student Response: Maria kicked the football 8 feet into the air. Alex kicked the football 1.5 feet higher than Maria did. David kicked the football 2.25 feet lower than Alex did. Jackie kicked the football 1.2 times as high as David did. So, the expression [(8 + 1.5) – 2.25] × 1.2 can be used to determine the height Jackie kicked the football into the air. Jackie kicked the football [(8 + 1.5) – 2.25] × 1.2 = (9.5 – 2.25) × 1.2 = 7.25 × 1.2 = 8.7 feet into the air. Or other valid approaches are acceptable.
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.

#26 Rubric	
2 Point Constructed Response Rubric – Part A	
Score	**Description**
2	Student response includes the following elements. • **Reasoning/Modeling component** = 1 point: Correctly describes that the point of intersection represents the solution because the point lies on both lines. • **Computation component** = 1 point: Correct point of intersection as $(-23,53)$-23,53 Sample Student Response: The two lines intersect at $(-23,53)$-23,53. The intersection point is where the two lines meet on the graph. This point satisfies both equations because it lies on both lines. If you substitute the x-coordinate of the intersection point into both equations, you get the same y-coordinate for both. Or other valid approaches are acceptable.
1	Student response includes 1 of the 2 elements.
0	Student response is incorrect or irrelevant.
2 Point Constructed Response Rubric – Part B	
Score	**Description**
2	Student response includes the following elements. • **Reasoning/Modeling component** = 1 point: Correctly explains why the point of intersection from Part A is equivalent to the solution point obtained in Part B • **Computation component** = 1 point: Correct solution of $(-23,53)$-23,53 Sample Student Response: $\{y=2x+3y=-x+1y=2x+3y=-x+1$ $2x+3=-x+12x+3=-x+1$ $3x=-23x=-2$ $x=-23x=-23$

	$y=-x+1; x=-23$ y=-x+1;x=-23 $y=-(-23)+1$ y=-(-23)+1 $y=23+1$ y=23+1 $y=53$ y=53 The solution to the system is $(-23,53)$ -23,53 When you graph both equations on a coordinate grid, you plot $y=2x+3$ y=2x+3 as a line with a slope of 2 and a y-intercept of 3. You plot $y=-x+1$ y=-x+1 as a line with a slope of -1 and a y-intercept of 1. The intersection point is where the two lines meet on the graph. This point satisfies both equations because it lies on both lines. If you substitute the x-coordinate of the intersection point into both equations, you get the same y-coordinate for both. By setting the two equations equal to each other, $2x+3=-x+1$ 2x+3=-x+1, you are finding the x-coordinate where both lines have the same y-value. Solving this gives the x-coordinate of the intersection point. Substituting the x-value back into either equation gives you the corresponding y-value. $(-23,53)$ -23,53 is the solution because it is the set of coordinates that satisfies both equations, and that is where the two lines meet on the graph. Or other valid approaches are acceptable.
1	Student response includes 1 of the 2 elements.

#27 Rubric	
Score	**Description**
3	Student response includes the following elements. • **Computation component** = 1 point: Identify how much less Atlas Hotel charges per night • **Modeling component** = 1 point: Explain how to determine Atlas Hotel's rate per night • **Modeling component** = 1 point: Explain how to determine Emerald Hotel's rate per night Sample Student Response: The slope of the equation is 175, so Atlas Hotel charges $175 per night. Emerald Hotel charges $540 ÷ 3 nights, or $180 per night. Atlas Hotel charges less per night. Atlas Hotel charges $180 – 175, or $5 less per night.

	Or other valid approaches are acceptable.
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.