

1. Which rule describes the ordered pairs in this table?

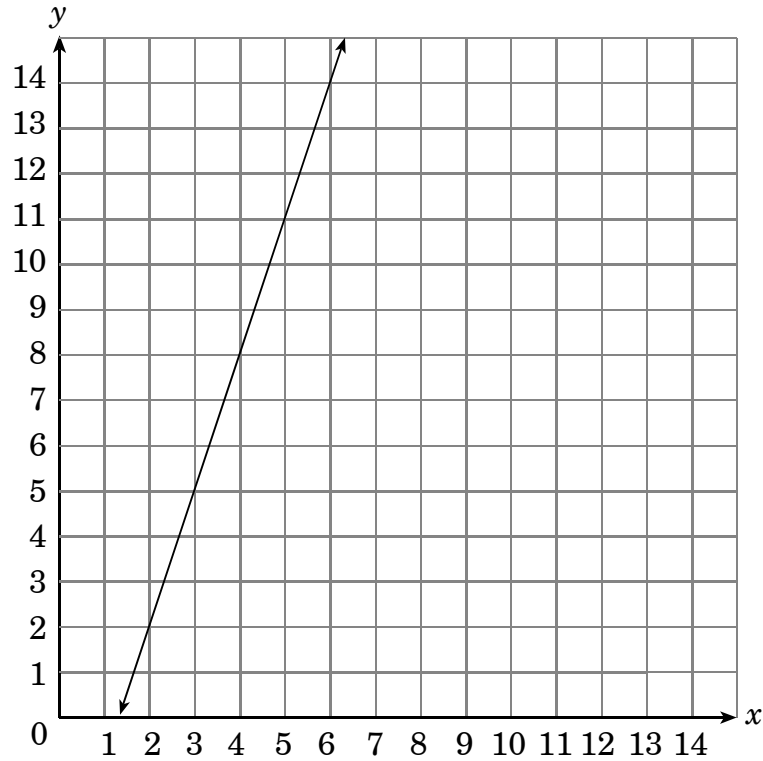
$x$	$y$
1	1
2	3
3	5
4	7

- A  $y = 2x - 1$
- B  $y = \frac{x}{2} + 2$
- C  $x = 3y - 2$
- D  $x = y - 1$
2. Which set contains only ordered pairs that satisfy  $y = 2x + 3$ ?
- A  $\{(0, 2), (1, 3), (2, 4)\}$
- B  $\{(0, 2), (1, 5), (2, 8)\}$
- C  $\{(0, 3), (1, 4), (2, 5)\}$
- D  $\{(0, 3), (1, 5), (2, 7)\}$

3. Smith's Video Store charged \$2.40 for each video rented plus a \$1.00 surcharge. The store decided to lower the surcharge to \$0.50. Which equation represents the new cost of renting  $m$  videos?

- A  $P = 1.90m + 1.00$
- B  $P = 1.90m + 0.50$
- C  $P = 2.40m + 0.50$
- D  $P = 2.40m + 1.50$

4. What is the relationship between  $x$  and  $y$  for the points on the line graphed below?



- A  $y = 2x$   
B  $y = 2x + 2$   
C  $y = 3x - 4$   
D  $y = 4x - 7$

5. Simplify:  $8y^2 - 3y - 5y + 2y^2$
- A  $8y^2 + 8y$
- B  $8y^2 - 8y$
- C  $10y^2 - 8y$
- D  $10y^2 - 10y$
6. For the animal shelter, Elena purchased five dog leashes for \$9.98 each, five bags of dog food for \$24.99 each, and five dog crates for  $x$  dollars each. Which equation could be used to determine Elena's total cost,  $T$ ?
- A  $5 + \$9.98 + 5 + \$24.99 = T$
- B  $\frac{\$9.98 + \$24.99}{5} = T$
- C  $(\$9.98 + \$24.99 + x)5 = T$
- D  $5 + (\$9.98 + \$24.99 + x) = T$
7. Jason walks at a rate of 1.5 meters per second. Which equation can be used to find how much time,  $t$ , in seconds it will take Jason to walk 2.7 kilometers?
- A  $2.7 \div 1.5 = t$
- B  $1.5 \times t = 2,700$
- C  $2,700 - 1.5 = t$
- D  $1.5 + t = 2.7$
8. In the summer, Ana earns \$6.00 an hour taking care of children. She works from 8:00 a.m. until 11:00 a.m. on Wednesday and Thursday and from 7:00 a.m. until 9:00 a.m. on Friday and Saturday. Which number sentence can be used to find the total amount of money ( $m$ , in dollars) Ana earns per week?
- A  $(3 + 2) \times 6 = m$
- B  $6 \times (3 + 3 + 2 + 2) = m$
- C  $(6 + 3) \times (6 + 2) = m$
- D  $(8 + 11 + 7 + 9) \times 6 = m$
9. A plane traveled a distance of 300 miles. The plane's rate of speed was 225 mph. How long did the flight take?
- A 45 min
- B 1 hr
- C 1 hr 20 min
- D 1 hr 30 min

10. Trent is using the linear equation  $x + y = 2$  to plot a line on graph paper. If  $(x, -4)$  are the coordinates of a point on the line, what is the value of  $x$ ?

A  $-4$   
 B  $-3$   
 C  $5$   
 D  $6$

11. What is the solution for this inequality?

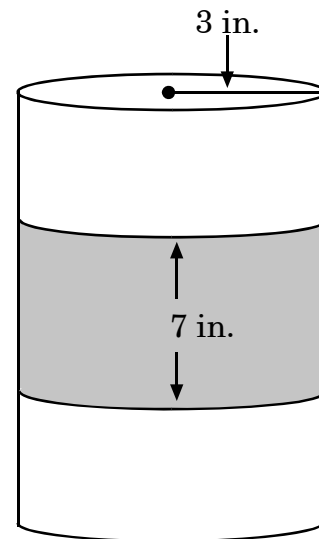
$$-3w + 3 \geq 18$$

A  $w \geq -7$   
 B  $w \leq -7$   
 C  $w \geq -5$   
 D  $w \leq -5$

12. Which ordered pair,  $(x, y)$ , makes the equation  $y = x + 3$  true?

A  $(3, 0)$   
 B  $(4, 1)$   
 C  $(2, 5)$   
 D  $(6, 4)$

13. A cylindrical can has a 7 in. wide label that wraps around the can. The can has a radius of 3 in.



What is the **approximate** area of the label?

- A 33.0 square inches  
 B 66.0 square inches  
 C 131.9 square inches  
 D 197.9 square inches
14. What is the **approximate** volume of a cone with a radius of 6 inches and a height of 9 inches?  $V = \frac{1}{3}\pi r^2 h$
- A 113.04 in.<sup>3</sup>  
 B 339.29 in.<sup>3</sup>  
 C 1,017.88 in.<sup>3</sup>  
 D 1,356.48 in.<sup>3</sup>

15. The formula  $F = 1.8C + 32$  can be used to convert temperatures from degrees Celsius ( $C$ ) to degrees Fahrenheit ( $F$ ). What Fahrenheit temperature is equivalent to  $-45$  degrees Celsius?
- A  $-49^{\circ}\text{F}$
- B  $-43^{\circ}\text{F}$
- C  $7.2^{\circ}\text{F}$
- D  $113^{\circ}\text{F}$



### End of Goal 5 Sample Items

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## Answers to EOG Grade 7 Math Sample Items

### Goal 5

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**1. Objective 5.01**

Identify, analyze, and create linear relations, sequences, and functions using symbols, graphs, tables, diagrams, and written descriptions.

**Thinking Skill:** Analyzing                      **Correct Answer:** A

**2. Objective 5.01**

Identify, analyze, and create linear relations, sequences, and functions using symbols, graphs, tables, diagrams, and written descriptions.

**Thinking Skill:** Analyzing                      **Correct Answer:** D

**3. Objective 5.01**

Identify, analyze, and create linear relations, sequences, and functions using symbols, graphs, tables, diagrams, and written descriptions.

**Thinking Skill:** Analyzing                      **Correct Answer:** C

**4. Objective 5.01**

Identify, analyze, and create linear relations, sequences, and functions using symbols, graphs, tables, diagrams, and written descriptions.

**Thinking Skill:** Analyzing                      **Correct Answer:** C

**5. Objective 5.02**

Translate among different representations of algebraic expressions, equations and inequalities.

**Thinking Skill:** Integrating                      **Correct Answer:** C

**6. Objective 5.02**

Translate among different representations of algebraic expressions, equations and inequalities.

**Thinking Skill:** Analyzing                      **Correct Answer:** C

**7. Objective 5.02**

Translate among different representations of algebraic expressions, equations and inequalities.

**Thinking Skill:** Analyzing                      **Correct Answer:** B

**8. Objective 5.02**

Translate among different representations of algebraic expressions, equations and inequalities.

**Thinking Skill:** Analyzing                      **Correct Answer:** B

- 9. Objective 5.03**  
Use and evaluate algebraic expressions, linear equations or inequalities to solve problems.  
**Thinking Skill:** Integrating                      **Correct Answer:** C
- 10. Objective 5.03**  
Use and evaluate algebraic expressions, linear equations or inequalities to solve problems.  
**Thinking Skill:** Applying                      **Correct Answer:** D
- 11. Objective 5.03**  
Use and evaluate algebraic expressions, linear equations or inequalities to solve problems.  
**Thinking Skill:** Applying                      **Correct Answer:** D
- 12. Objective 5.03**  
Use and evaluate algebraic expressions, linear equations or inequalities to solve problems.  
**Thinking Skill:** Analyzing                      **Correct Answer:** C
- 13. Objective 5.04**  
Develop fluency in the use of formulas to solve problems.  
**Thinking Skill:** Applying                      **Correct Answer:** C
- 14. Objective 5.04**  
Develop fluency in the use of formulas to solve problems.  
**Thinking Skill:** Applying                      **Correct Answer:** B
- 15. Objective 5.04**  
Develop fluency in the use of formulas to solve problems.  
**Thinking Skill:** Applying                      **Correct Answer:** A