

A.REI.D.10: Writing Linear Equations 2

1 What is an equation of the line that passes through the points $(3, -3)$ and $(-3, -3)$?

- 1) $y = 3$
- 2) $x = -3$
- 3) $y = -3$
- 4) $x = y$

2 Which equation represents the line whose slope is 2 and whose y -intercept is 6?

- 1) $y = 2x + 6$
- 2) $y = 6x + 2$
- 3) $2y + 6x = 0$
- 4) $y + 2x = 6$

3 An equation of the line that has a slope of 3 and a y -intercept of -2 is

- 1) $x = 3y - 2$
- 2) $y = 3x - 2$
- 3) $y = -\frac{2}{3}x$
- 4) $y = -2x + 3$

4 Which equation represents a line that has a slope of $\frac{3}{4}$ and passes through the point $(2, 1)$?

- 1) $3y = 4x - 5$
- 2) $3y = 4x + 2$
- 3) $4y = 3x - 2$
- 4) $4y = 3x + 5$

5 What is an equation of the line that passes through the points $(1, 3)$ and $(8, 5)$?

- 1) $y + 1 = \frac{2}{7}(x + 3)$
- 2) $y - 5 = \frac{2}{7}(x - 8)$
- 3) $y - 1 = \frac{2}{7}(x + 3)$
- 4) $y + 5 = \frac{2}{7}(x - 8)$

6 How many of the equations listed below represent the line passing through the points $(2, 3)$ and $(4, -7)$?

$$5x + y = 13$$

$$y + 7 = -5(x - 4)$$

$$y = -5x + 13$$

$$y - 7 = 5(x - 4)$$

- 1) 1
- 2) 2
- 3) 3
- 4) 4

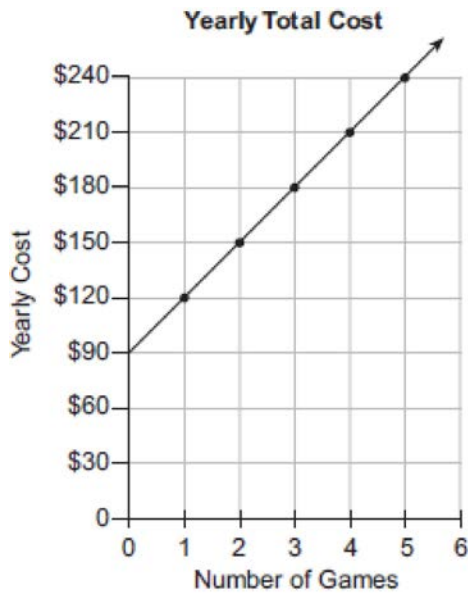
7 Write an equation that represents the line that passes through the points $(5, 4)$ and $(-5, 0)$.

8 Sue and Kathy were doing their algebra homework. They were asked to write the equation of the line that passes through the points $(-3, 4)$ and $(6, 1)$. Sue wrote $y - 4 = -\frac{1}{3}(x + 3)$ and Kathy wrote $y = -\frac{1}{3}x + 3$. Justify why both students are correct.

- 9 The graph of a linear equation contains the points $(3, 11)$ and $(-2, 1)$. Which point also lies on the graph?
- 1) $(2, 1)$
 - 2) $(2, 4)$
 - 3) $(2, 6)$
 - 4) $(2, 9)$

- 10 Line l contains the points $(0, 4)$ and $(2, 0)$. Show that the point $(-25, 81)$ does *or* does not lie on line l .

- 11 The accompanying graph represents the yearly cost of playing 0 to 5 games of golf at the Shadybrook Golf Course. What is the total cost of joining the club and playing 10 games during the year?



A.REI.D.10: Writing Linear Equations 2 Answer Section

1 ANS: 3 REF: 010910ia

2 ANS: 1 REF: 010905a

3 ANS: 2 REF: 010408a

4 ANS: 3

$$y = mx + b \quad y = \frac{3}{4}x - \frac{1}{2}$$

$$1 = \left(\frac{3}{4}\right)(2) + b \quad 4y = 3x - 2$$

$$1 = \frac{3}{2} + b$$

$$b = -\frac{1}{2}$$

REF: 081219ia

5 ANS: 2

$$m = \frac{5-3}{8-1} = \frac{2}{7} \quad y - y_1 = m(x - x_1)$$

$$y - 5 = \frac{2}{7}(x - 8)$$

REF: 081029ia

6 ANS: 3

$$m = \frac{3-7}{2-4} = -5 \quad 3 = (-5)(2) + b \quad y = -5x + 13 \text{ represents the line passing through the points } (2,3) \text{ and } (4,-7). \text{ The}$$

$$b = 13$$

fourth equation may be rewritten as $y = 5x - 13$, so is a different line.

REF: 081720ai

7 ANS:

$$y = \frac{2}{5}x + 2. \quad m = \frac{4-0}{5-(-5)} = \frac{2}{5}. \quad y = mx + b$$

$$4 = \frac{2}{5}(5) + b$$

$$b = 2$$

REF: 080836ia

8 ANS:

$$m = \frac{4-1}{-3-6} = \frac{3}{-9} = -\frac{1}{3} \quad y - y_1 = m(x - x_1)$$

$$4 = -\frac{1}{3}(-3) + b \quad y - 4 = -\frac{1}{3}(x + 3)$$

$$4 = 1 + b$$

$$3 = b$$

$$y = -\frac{1}{3}x + 3$$

REF: 061629ai

9 ANS: 4

$$m = \frac{11-1}{3-(-2)} = \frac{10}{5} = 2 \quad y = mx + b \quad y = 2x + 5$$

$$11 = 2(3) + b \quad 9 = 2(2) + 5$$

$$5 = b$$

REF: 011511ai

10 ANS:

Find the slope: $m = \frac{4-0}{0-2} = -2$; use the given y -intercept $(0,4)$ to write an equation of the line, and substitute into the equation to show that $(-25,81)$ does not lie on line ℓ : $y = -2x + 4$

$$81 \neq -2(-25) + 4$$

REF: 089929a

11 ANS:

390. The cost of joining the club is the y -intercept, \$90, and each game costs \$30. This function may be written as $y = 30x + 90$, and used to find the total cost of joining the club and playing 10 games during the year.

$$y = 30x + 90$$

$$= 30(10) + 90$$

$$= 390$$

REF: 060025a