

**A.A.35: Writing Linear Equations: Write the equation of a line, given the coordinates of two points on the line**

- 1 Which equation represents the line that passes through the points  $(-1, -2)$  and  $(3, 10)$ ?
  - 1)  $y = 3x + 1$
  - 2)  $y = 3x - 1$
  - 3)  $y = 4x + 2$
  - 4)  $y = 4x - 2$
- 2 What is an equation for the line that passes through the coordinates  $(2, 0)$  and  $(0, 3)$ ?
  - 1)  $y = -\frac{3}{2}x + 3$
  - 2)  $y = -\frac{3}{2}x - 3$
  - 3)  $y = -\frac{2}{3}x + 2$
  - 4)  $y = -\frac{2}{3}x - 2$
- 3 Which equation represents the line that passes through the points  $(-3, 7)$  and  $(3, 3)$ ?
  - 1)  $y = \frac{2}{3}x + 1$
  - 2)  $y = \frac{2}{3}x + 9$
  - 3)  $y = -\frac{2}{3}x + 5$
  - 4)  $y = -\frac{2}{3}x + 9$
- 4 Which equation represents the line that passes through the points  $(1, 1)$  and  $(-2, 7)$ ?
  - 1)  $y = -2x + 9$
  - 2)  $y = -2x + 3$
  - 3)  $y = -\frac{1}{2}x + 8$
  - 4)  $y = -\frac{1}{2}x + 6$
- 5 What is an equation of the line that passes through the points  $(2, 1)$  and  $(6, -5)$ ?
  - 1)  $y = -\frac{3}{2}x - 2$
  - 2)  $y = -\frac{3}{2}x + 4$
  - 3)  $y = -\frac{2}{3}x - 1$
  - 4)  $y = -\frac{2}{3}x + \frac{7}{3}$
- 6 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)  $y + 5 = \frac{2}{7}(x - 8)$
- 7 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)  $x = y$
- 8 Write an equation that represents the line that passes through the points  $(5, 4)$  and  $(-5, 0)$ .

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## Answer Section

1 ANS: 1

$$m = \frac{10 - -2}{3 - -1} = \frac{12}{4} = 3 \quad y = mx + b$$

$$10 = 3(3) + b$$

$$10 = 9 + b$$

$$1 = b$$

REF: 061515ia

2 ANS: 1

$$m = \frac{3 - 0}{0 - 2} = -\frac{3}{2}. \text{ Using the given y-intercept } (0, 3) \text{ to write the equation of the line } y = -\frac{3}{2}x + 3.$$

REF: fall0713ia

3 ANS: 3

$$m = \frac{7 - 3}{-3 - 3} = \frac{4}{-6} = -\frac{2}{3} \quad y = mx + b$$

$$3 = -\frac{2}{3}(3) + b$$

$$3 = -2 + b$$

$$5 = b$$

REF: 011013ia

4 ANS: 2

$$m = \frac{1 - 7}{1 - -2} = \frac{-6}{3} = -2 \quad y = mx + b$$

$$1 = -2(1) + b$$

$$3 = b$$

REF: 081404ia

5 ANS: 2

$$m = \frac{1 - (-5)}{2 - 6} = \frac{6}{-4} = -\frac{3}{2} \quad 1 = \left(-\frac{3}{2}\right)(2) + b$$

$$1 = -3 + b$$

$$4 = b$$

REF: 011510ia

6 ANS: 2

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

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

REF: 081029ia

7 ANS: 3

REF: 010910ia

8 ANS:

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

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

$$b = 2$$

REF: 080836ia