Key

Math 1

Name_____

5-2 & 5-3 Learn Check

Date_____

- *I can find the equation of a line parallel to another line through a given coordinate.*
- *I can find the equation of a line perpendicular to another line through a given coordinate.*
- *I can find the distance between two points.*
- *I can find the midpoint of a line segment.*

1. Find the equation of the line parallel to $y = 2 - \frac{3}{4}x$ that passes through the point (8, -3). Put your equation in slope-intercept form.

A. $y = \frac{4}{3}x - \frac{41}{3}$ B. $y = -\frac{4}{3}x + \frac{23}{3}$ C. $y = -\frac{3}{4}x + 3$ D. $y = \frac{3}{4}x - 9$

$y + 3 = -\frac{3}{4}(x - 8)$

$y = -\frac{3}{4}x + 6 - 3$

2. Find the equation of the line perpendicular to $y = 2 - \frac{3}{4}x$ that passes through the point (8, -3). Put your equation in slope-intercept form.

A. $y = -\frac{3}{4}x + 3$ B. $y = \frac{4}{3}x - \frac{23}{3}$ C. $y = \frac{4}{3}x - \frac{41}{3}$ D. $y = -\frac{4}{3}x + \frac{23}{3}$

$y + 3 = \frac{4}{3}(x - 8)$

$y = \frac{4}{3}x - \frac{32}{3} - 3$

3. Find the midpoint for a line segment with the following endpoints: (2, -7) & (-6, -12)

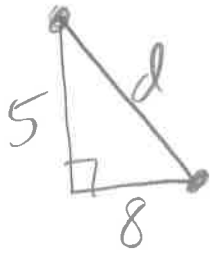
A. (4, 2.5) B. (−2, −9.5) C. (−2.5, −9) D. (4.5, 3)

$M = \left(\frac{2 + -6}{2}, \frac{-7 + -12}{2}\right)$

$M = \left(-\frac{4}{2}, \frac{-19}{2}\right)$

4. Find the length of the line segments with endpoints: (2, -7) & (-6, -12).

A. $\sqrt{39}$ B. $\sqrt{425}$ C. $\sqrt{117}$ D. $\sqrt{89}$



$8^2 + 5^2 = d^2$

$64 + 25 = d^2$

OVER→

5. Find the equation of the perpendicular bisector for the line segment from (-4, -2) to (6, 3). Write you equation in slope-intercept form.

1) Find midpoint: $\left(\frac{2}{2}, \frac{1}{2}\right) = \left(1, \frac{1}{2}\right)$

2) Find slope: $m = \frac{3-2}{6-4} = \frac{5}{10} = \frac{1}{2}$

3) Find equation of $\perp$ line through midpoint:

$$y - \frac{1}{2} = -2(x - 1)$$

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

$$\boxed{y = -2x + 2.5}$$