

3.6 Practice Solutions

Directions: Write the slope-intercept form of the equation of the line described.

<p>1) through (-2, 2), parallel to $y = -x - 2$</p> $y = mx + b$ $2 = (-1)(-2) + b$ $2 = 2 + b$ $\frac{-2}{-2} \quad \frac{-2}{-2}$ $0 = b$ $y = -x + 0$ $y = -x$	<p>2) through (-2, -3), parallel to $y = x - 3$</p> $y = mx + b$ $-3 = (1)(-2) + b$ $-3 = -2 + b$ $\frac{-3}{+2} \quad \frac{-2}{+2}$ $-1 = b$ $y = x - 1$	<p>3) through (-4, -5), parallel to $y = \frac{5}{2}x$</p> $y = mx + b$ $-5 = (\frac{5}{2})(-4) + b$ $-5 = -10 + b$ $\frac{-5}{+10} \quad \frac{-10}{+10}$ $5 = b$ $y = \frac{5}{2}x + 5$
<p>4) through (-3, 1), perpendicular to $y = \frac{3}{2}x - 2$</p> $m = -\frac{2}{3}$ $y = mx + b$ $1 = (-\frac{2}{3})(-3) + b$ $1 = 4 + b$ $\frac{-1}{-4} \quad \frac{-4}{-4}$ $-3 = b$ $y = -\frac{2}{3}x - 3$	<p>5) through (-3, -2), perpendicular to $y = -x - 4$</p> $m = 1$ $y = mx + b$ $-2 = (1)(-3) + b$ $-2 = -3 + b$ $\frac{-2}{+3} \quad \frac{-3}{+3}$ $1 = b$ $y = x + 1$	<p>6) through (-3, -5), perpendicular to $y = -3x - 5$</p> $m = \frac{1}{3}$ $y = mx + b$ $-5 = (\frac{1}{3})(-3) + b$ $-5 = -1 + b$ $\frac{-5}{+1} \quad \frac{-1}{+1}$ $-4 = b$ $y = \frac{1}{3}x - 4$
<p>Directions: Determine whether the lines are parallel, perpendicular or neither.</p>		
<p>7) $2x - 7y = -42$</p> $\frac{4y}{4} = \frac{-7x - 2}{4}$ $y = (\frac{-7}{4})x - \frac{1}{2}$ <p style="text-align: center;">neither</p>	<p>8) $2x - 7y = -12$</p> $\frac{-7y}{-7} = \frac{-2x - 12}{-7}$ $y = (\frac{2}{7})x + 6$ <p style="text-align: center;">PERPENDICULAR</p>	<p>9) $2x + 5y = -1$</p> $\frac{10y}{10} = \frac{-4x - 20}{10}$ $y = (\frac{-4}{5})x - 2$ <p style="text-align: center;">PARALLEL</p>

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10) A parallelogram is a quadrilateral that has opposite sides that are parallel. Is quadrilateral ABCD a parallelogram? Why or why not?
 A(0,2), B(3,4), C(2,7) and D(-1,5)

$$\overline{AB} \rightarrow m = \frac{4-2}{3-0} = \frac{2}{3}$$

$$\overline{BC} \rightarrow m = \frac{7-4}{2-3} = \frac{3}{-1} = -3$$

$$\overline{CD} \rightarrow m = \frac{5-7}{-1-2} = \frac{-2}{-3} = \frac{2}{3}$$

$$\overline{DA} \rightarrow m = \frac{2-5}{0-(-1)} = \frac{-3}{1} = -3$$

opposite

opposite

Yes
PARALLELOGRAM

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