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Ex) Write the equation of the line passing through $(-2, 4)$ and $(8, 10)$.

x_1 y_1 x_2 y_2

$$y - y_1 = m(x - x_1)$$

a) slope $\Rightarrow m = \frac{3}{5}$

$$y - 4 = \frac{3}{5}(x - (-2))$$

$$y - 4 = \frac{3}{5}x + \frac{6}{5}$$

$$+4 \qquad +4$$

$$y = \frac{3}{5}x + \frac{26}{5}$$

$$\frac{3}{5} \cdot \frac{2}{1}$$

*Tip: You can use either of the two points.

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Ex) Write the equation of the line through $(-2, 4)$ and $(8, 10)$.

$$a) m = \frac{6}{10} = \frac{3}{5}$$

b) Use $y - y_1 = m(x - x_1)$

$$y - 4 = \frac{3}{5}(x - (-2))$$

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

$$y - 4 = \frac{3}{5}x + \frac{6}{5}$$

$$+4 \quad +4$$

$$y = \frac{3}{5}x + \frac{26}{5}$$

* Tip: You can use either of the two points to write your equation.

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Equations of Horizontal and Vertical Lines

Horizontal Line

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Your equation will be $y = \underline{\quad ? \quad}$

? = y-value of the ordered pair.

Vertical Line

Your equation will be $x = \underline{\quad ? \quad}$

? = x-value of the ordered pair.