

# Finding a missing coordinate <sup>10/6</sup>

\*you will be given the Slope and 1 point

## Example | Steps

$$m = -5 \quad (-8, 3)$$

$$\quad \quad \quad (-4, r)$$

$$-5 = \frac{r-3}{-4-(-8)}$$

$$\frac{-5}{1} = \frac{r-3}{4}$$

$$\begin{array}{r} -20 = r-3 \\ +3 \quad +3 \end{array}$$

$$\boxed{r = -17}$$

1. Use the Slope Formula

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

→ Write Slope as a Fraction

2. Do the math you can

3. Solve the proportion  
(Cross Multiply/Distribute)

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## Practice

①  $m = \frac{5}{6} \quad (5, 2) (-7, r)$

$$\frac{5}{6} = \frac{r-2}{-7-5}$$

$$\frac{5}{6} = \frac{r-2}{-12}$$

$$-60 = 6(r-2)$$

$$\begin{array}{r} -60 = 6r - 12 \\ +12 \quad +12 \end{array}$$

$$\frac{-48}{6} = \frac{6r}{6}$$

$$\boxed{r = -8}$$

②  $(r, 3) (5, 9) \quad m = 2$

$$\frac{2}{1} = \frac{9-3}{5-r}$$

$$\frac{2}{1} = \frac{6}{5-r}$$

$$6 = 10 - 2r$$

$$\begin{array}{r} -10 - 10 \\ -4 = -2r \end{array}$$

$$\frac{-4}{-2} = \frac{-2r}{-2}$$

$$\boxed{r = 2}$$

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③  $m = \text{undefined}$   
 $(2, 3) (r, 4)$

$$\frac{1}{0} = \frac{4-3}{r-2}$$

$$\frac{1}{0} = \frac{1}{r-2}$$

$$\begin{array}{l} r-2 = 0 \\ +2 \quad | \end{array}$$

\* Undefined Slopes  
ALWAYS have the  
Same x-Values.  
(zero on Bottom)

\* Zero Slopes ALWAYS  
have the Same  
y-Values  
(zero on top)

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