Lines: Lesson 6

Equations from 2 Points: Notes Answers

Name: _____

Method 1: Using Point-Slope Form

1. Find the slope between the points. $\frac{y_2-y_1}{x_2-x_1}$
2. Put the slope and either point into point-slope form.
3. Distribute the slope and solve for y. $y-y_1=m(x-x_1)$

Method 2: Using Slope Intercept Form

1. Find the slope between the points. $\frac{y_2-y_1}{x_2-x_1}$
2. Put the slope and either point into $y=mx+b$.
3. Solve for b.
4. Put m and b into $y=mx+b$.

Write the equation of the line through (-3, 5) and (1, 7).

Method 1:

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

$y-7=\frac{1}{2}(x-1)$

$y-7=\frac{1}{2}x-\frac{1}{2}$

$+7=\frac{14}{2}$

$y=\frac{1}{2}x+\frac{13}{2}$

$m=\frac{7-5}{1-(-3)}=\frac{2}{4}=\frac{1}{2}$

Method 2:

$y=mx+b$ $\quad m=\frac{1}{2}$

$7=\frac{1}{2}(1)+b$

$\frac{14}{2}=7=\frac{1}{2}+b$

$-\frac{1}{2}\ -\frac{1}{2}$

$\frac{13}{2}=b$

$y=\frac{1}{2}x+\frac{13}{2}$

Write the equation of the line through (0, 4) and (5, 4).

Method 2:

$m = \frac{4-4}{5-0} = \frac{0}{5} = 0$

$4 = 0(5) + b$

$b = 4$

$y = 0x + 4 \rightarrow y = 4$

horizontal line
slope = 0

Write the equation of the line through (-3, 1) and (-3, 5).

$m = \frac{5-1}{-3-(-3)} = \frac{4}{0}$ ← !!

$x = -3$