

Transversals – Equations of Lines in the Coordinate Plane

Notes Section 3.5

Name _____

Formula for slope of a line

$$m = \frac{\Delta y}{\Delta x}$$

Slope-Intercept form

$$y = mx + b$$

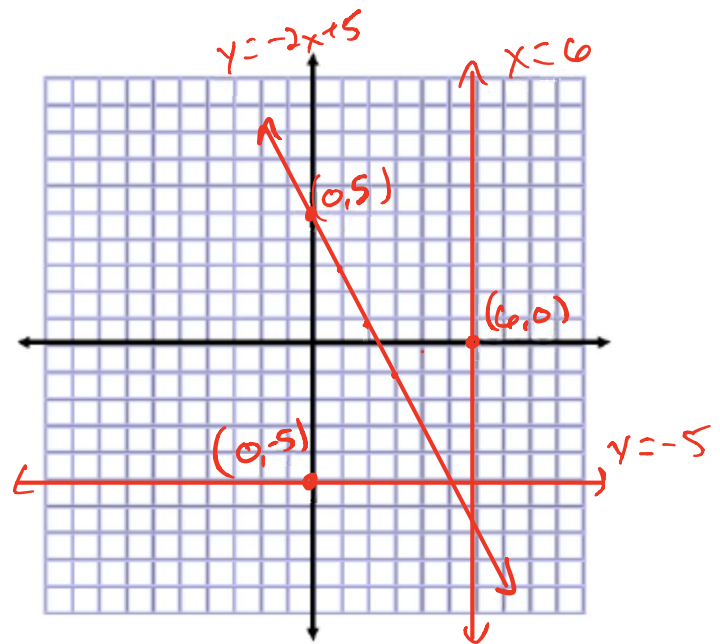
Point-Slope form

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

1. Find the slope of a line containing (4,6) and (-3,4)

$$\begin{aligned} m &= \frac{\Delta y}{\Delta x} \\ &= \frac{(6) - (4)}{(4) - (-3)} \\ m &= \frac{2}{7} \end{aligned}$$

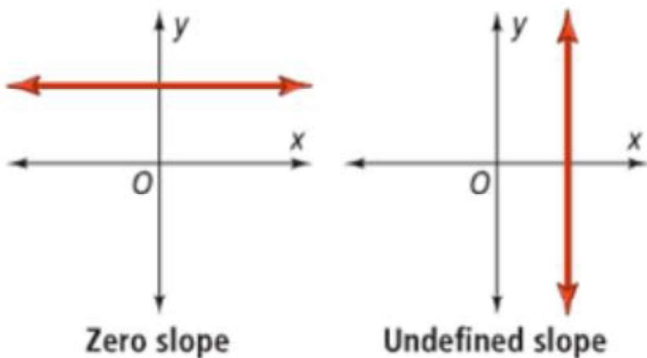
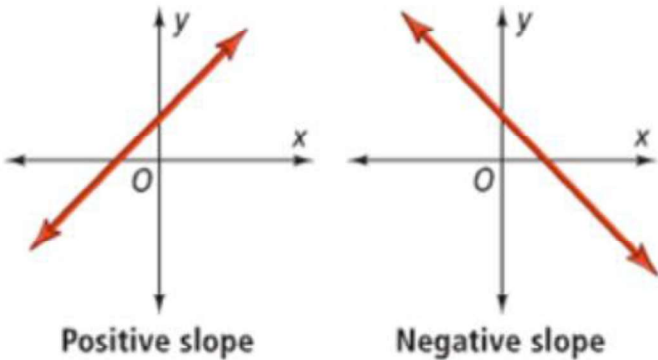
2. Graph $y = -2x + 5$



3. Graph $x = 6$

4. Graph $y = -5$

Types of Slope



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5. Write the equation of the line with slope of 5 and y-intercept of -3.

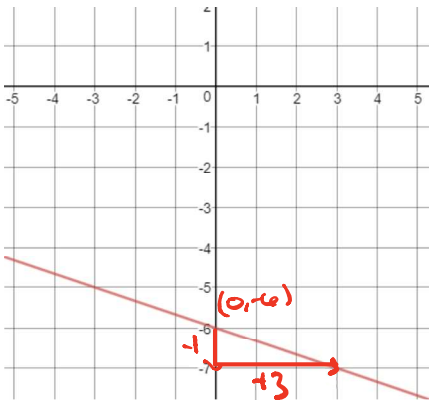
$$y = mx + b$$

$$y = 5x - 3$$

6. Write the equation of the line through the point (-3, 6) with the slope -2.

Point	Slope	Point-Slope
$(-3, 6)$	$m = -2$	$y - y_1 = m(x - x_1)$ $y - 6 = -2(x - (-3))$

7. Write the equation of the line.



$$m = -\frac{1}{3}$$

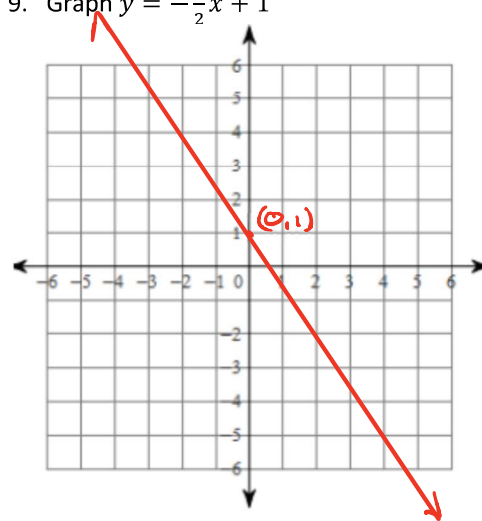
$$b = -6$$

$$y = -\frac{1}{3}x - 6$$

8. Write the equation of the line through (-3, 1) and (4, 8)

Point	Slope	Point-Slope
$(4, 8)$	$m = \frac{\Delta y}{\Delta x}$ $= \frac{(1) - (8)}{(-3) - (4)}$ $= \frac{-7}{-7}$ $m = 1$	$y - y_1 = m(x - x_1)$ $y - (8) = 1(x - (4))$

9. Graph $y = -\frac{3}{2}x + 1$



10. Write the equation of the line through (4, 1) and (0, 4).

Point	Slope	Point-Slope Form
$(0, 4)$	$m = \frac{\Delta y}{\Delta x}$ $= \frac{(1) - (4)}{(4) - (0)}$ $m = -\frac{3}{4}$	$y - y_1 = m(x - x_1)$ $y - 4 = -\frac{3}{4}(x - 0)$