

Math 10D

Unit – Grade 9 Skills Review

Lesson 1: Solving Equations and Graphing Lines

Name: _____

Date: Oct 6, 2025Equations – Solving For X

Solve the following equations:

a.) $5x - 4 = 11$

$5x = 11 + 4$

$\frac{5x}{5} = \frac{15}{5}$

$x = 3$

c.) $\frac{x+4}{8} = 7$

$x + 4 = 7(8)$

$x + 4 = 56$

$x = 56 - 4$

$x = 52$

b.) $3x - 1 = x + 13$

$3x - x = 1 + 13$

$\frac{2x}{2} = \frac{14}{2}$

$x = 7$

d.) $\frac{x}{5} + 3 = -2$

$\frac{x}{5} = -2 - 3$

$\frac{x}{5} = -5$

$x = (-5)(5) = -25$

$x = -25$

How to Clear Equations with Fractions

$$\frac{3x}{4} + \frac{5}{2} = \frac{6x}{2} - \frac{4x}{3}$$

$LCM(4, 2, 3) = 12$

$$\Rightarrow \frac{3x}{12} + \frac{30}{12} = \frac{6x}{12} - \frac{4x}{12}$$

$$\Rightarrow 30 = 6x - 4x - 3x$$

$$\Rightarrow -(30) = (-x)$$

$$\Rightarrow -30 = x$$

Solve for x:

$$\frac{2(2x)^7(3x)}{2x^7 \cdot 7^2} = \frac{x}{(14)} - \frac{(36)^{1/4}}{1 \times 14}$$

$$\text{LCD}(7, 2, 14, 1) = 14$$

$$\Rightarrow \frac{4x}{14} - \frac{21x}{14} = \frac{x}{14} - \frac{504}{14}$$

$$\Rightarrow 4x - 21x - x = -504$$

$$\Rightarrow \frac{-18x}{-18} = \frac{-504}{-18}$$

$$\Rightarrow \boxed{x = 28}$$

Graphing Review

Graphing Using Intercepts

1.) Identify the x and the y-intercepts:

Line A

$\Rightarrow$ X-intercept: $(8, 0)$

$\Rightarrow$ Y-intercept: $(0, 2)$

Line B

$\Rightarrow$ X-intercept: $(-3, 0)$

$\Rightarrow$ Y-intercept: $(0, 5)$

Line C

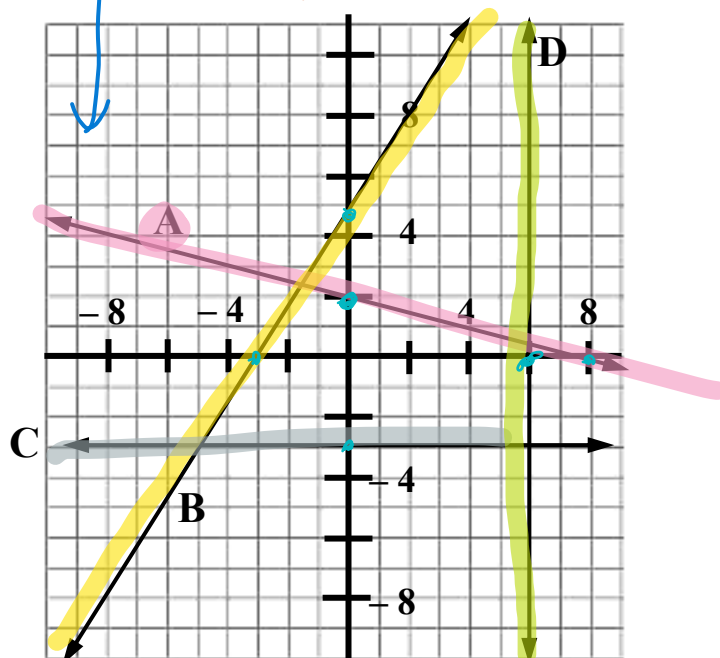
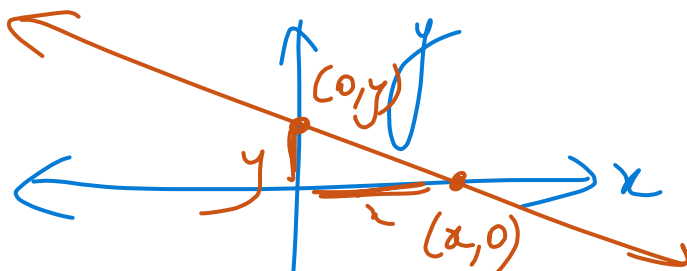
$\Rightarrow$ X-intercept: Does not exist

$\Rightarrow$ Y-intercept: $(0, -3)$

Line D

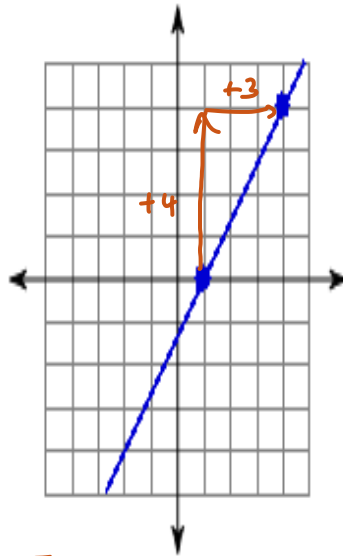
$\Rightarrow$ X-intercept: $(6, 0)$

$\Rightarrow$ Y-intercept: Does not exist



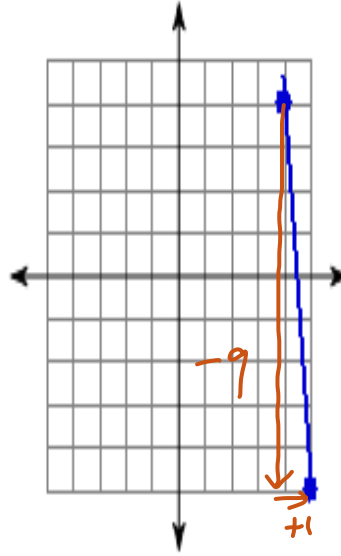
3.) Find the **slope** of the following lines

1)



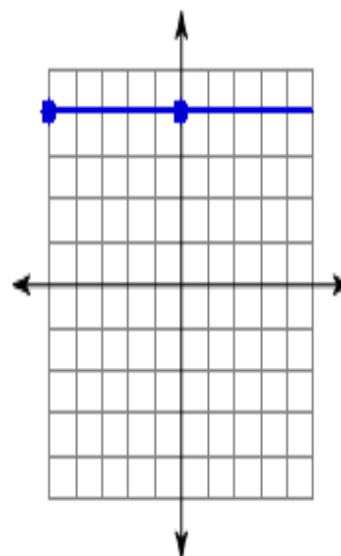
$$m = \frac{3}{4}$$

2)



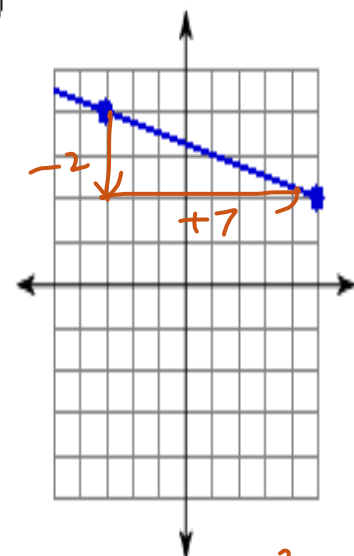
$$m = \frac{-9}{1} = -9$$

3)



$$m = 0$$

4)



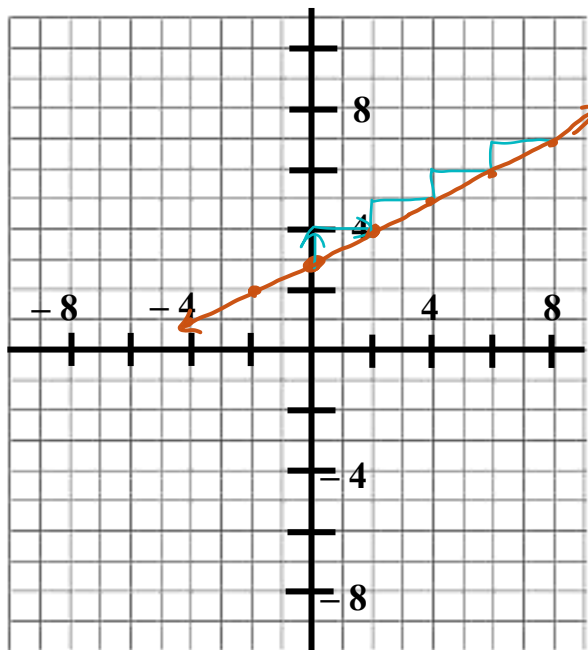
$$m = \frac{-2}{7}$$

$$m = \frac{\text{Rise}}{\text{Run}} = \frac{\Delta y}{\Delta x}$$

SLOPE-POINT FORM EQUATIONS: $y = mx + b$

4.) Graph $y = \frac{1}{2}x + 3$ on the Cartesian Plane:

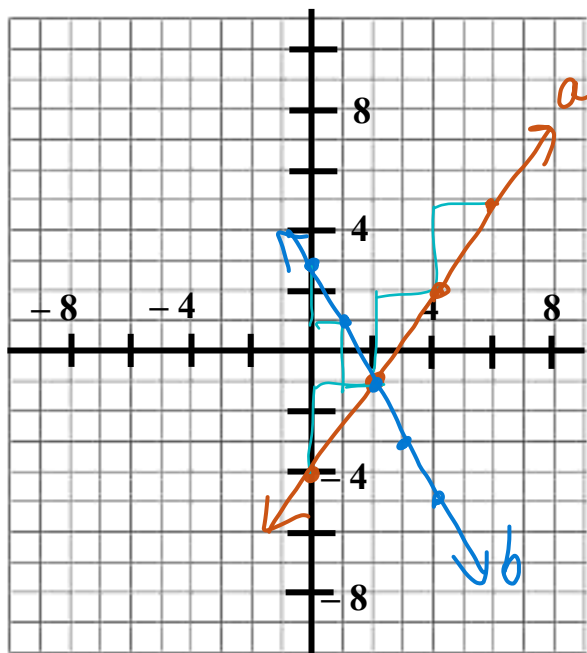
$y = \frac{1}{2}x + 3$
 (1) ← rise
 (2) ← run
 $m = \text{slope}$
 $b = \text{y-int.}$
 $y = mx + b$



5.) Graph the following lines on the Cartesian Plane:

a.) $y = \frac{3}{2}x - 4$
 $m = \frac{3}{2}$ $b = -4$

b.) $y = -2x + 3$
 $m = -\frac{2}{1}$, $b = 3$



6.) Graph the following equations on the Cartesian Plane:

a.) $y = -\frac{4}{3}x - \frac{1}{2}$

$y = -\frac{4}{3}x - \frac{1}{2}$ (circled) -0.5

b.) $4x + 7y - 14 = 0$ $y = mx + b$

$\frac{7y}{7} = \frac{-4x + 14}{7}$

$y = -\frac{4}{7}x + 2$

