Equations for a Line

- Slope-Intercept Form $y = mx + b$
- Standard Form $Ax + By = C$
- Point-Slope Form $y - y_1 = m(x - x_1)$
- Horizontal Lines $y = \#$
- Vertical Lines $x = \#$

1. Change each equation into Slope-Intercept Form.

a) $y - 9 = -\frac{5}{6}(x - 24)$

$y - 9 = -\frac{5}{6}x + 20$

$y = -\frac{5}{6}x + 29$

b) $24x - 18y = 90$

$-24x \quad -24x$

$-18y = -24x + 90$

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

2. Miguel bought some basketballs and soccer balls for the gym class. Basketballs cost $24 each and soccer balls cost $30 each. He spent a total of $360.

a) Model this situation with an equation. Define your variables.

EQ: $24b + 30s = 360$ Variables: b = basketballs, s = soccer balls

b) If he bought zero soccer balls find the number of basketballs purchased.

$24b = 360$

$b = 15$

3. Write the equation of the line that passes through the points $(1,-2)$&$(4,-2)$. Give your answer in any form you wish.

$m = 0$

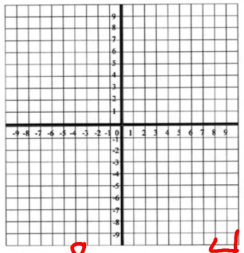
$y = -2$

4. A line passes through the points $(5,9)$&$(5,-1)$. Why can't you write the equation of this line in Slope-Intercept Form?

$x = 5$

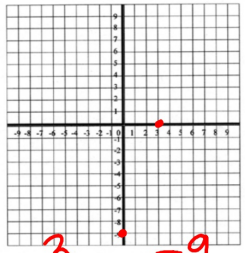
Find the x- and y-intercepts of each equation and then graph the line.

1) x + 2y = 8



x-int = 8 y-int = 4

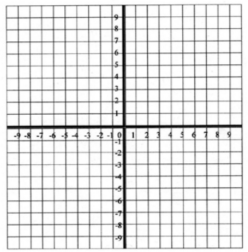
2) 3x – y = 9



x-int = 3 y-int = -9

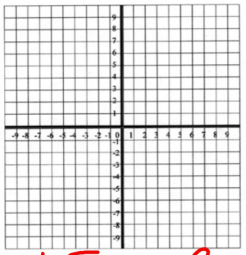
(3, 0)

3) -5x + 6y = 30



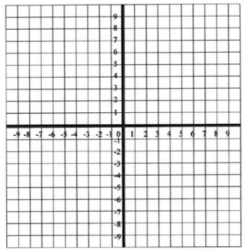
x-int = -6 y-int = 5

4) -6x + 3y = -9



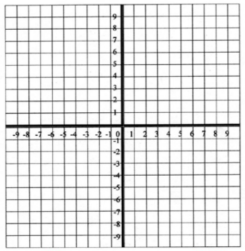
x-int = 1.5 y-int = -3

5) -3x + y = 6



x-int = -2 y-int = 6

6) 5x – 3y = 15



x-int = 3 y-int = -5

Write each equation in standard form using integers.

7) $y = 3x + 1$ $-3x+y=1$

8) $y = 4x - 7$ $-4x+y=-7$

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

$Ax+By=C$

$y=mx+b$

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

11) $y = -\frac{3}{4}x - 4$ $\frac{3}{4}x+y=4$

12) $y = -\frac{4}{5}x - 7$ $\frac{4}{5}x+y=-7$

13) $y = \frac{7}{2}x + \frac{1}{4}$

14) $y = -\frac{2}{5}x + \frac{1}{10}$

15) $y = -3x$ $3x+y=0$ $-3x-y=0$

16) Write an equation of a line (in standard form) that has the same slope as the line $3x - 5y = 7$ and the same y-intercept as the line $2y - 9x = 8$.

$-5y = -3x + 7$

$y = \frac{3}{5}x - \frac{7}{5}$

$m = \frac{3}{5}$

$2y = 9x + 8$

$y = \frac{9}{2}x + 4$

$b = 4$

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

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

TIME FOR A QUIZ!

- Put everything away except a calculator and a pencil.
- Once you're finished, place your quiz in the folder on the gray cart.

IXL #16 - S.11 & S.15 due Friday at 6pm!