

OBJECTIVE 1: Identifying Linear Equations

Standard Form: $Ax + By = C$

- No decimals
- No fractions
- "A" must be positive

TASK 1: Determine whether each equation is a linear equation in two variables. Basically rewrite the equation in standard form. If you cannot, then it is not a linear equation in two variables.

a) $x - 1.5y = -1.6$ ✓

b) $y = -2x$ ✓

c) $x + y^2 = 9$ ✗

d) $x = 5$

✗ $Ax + By = C$

OBJECTIVE 2: Graphing Linear Equation by Plotting Ordered Pair Solutions

Graphing an equation in two variables requires that we find just two of its infinitely many solutions. Reminder that slope-intercept form ($y = mx + b$) means you begin with your "b" on the y-axis and then move your "m" up or down first and then always to the right.

STEPS:

1. Two points
2. Connect them with a line
3. Arrows on both ends of the line

Task 2: Graph the linear equation. Then compare in words a & b, c & d, e & f, g & h.

a) $2x + y = 5$

b) $x + 3y = 9$

c) $y = 3x$

d) $y = -2x$

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

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

g) $y = -2$

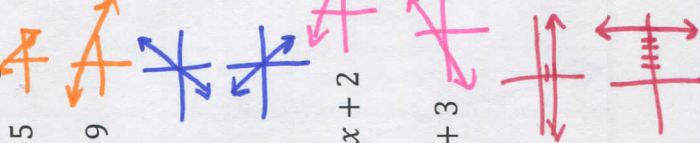
h) $x = 5$

both negative slope
y-int & slope diff

both origin y-int
pos & neg slope

pos & neg slope
diff y-int

vertical vs horizontal
no x-int vs no y-int
slopes 0 or undefined



Estimating the Number of Registered Nurses

The occupation expected to have the most employment growth in the next few years is registered nurse. The number of people y (in thousands) employed as registered nurses in the United States can be estimated by the linear equation $y = 58.1x + 2619$, where x is the number of years after the year 2008.

- a) Graph the equation. Label and title your graph.
- b) Use the graph to predict the number of registered nurses in the year 2018.

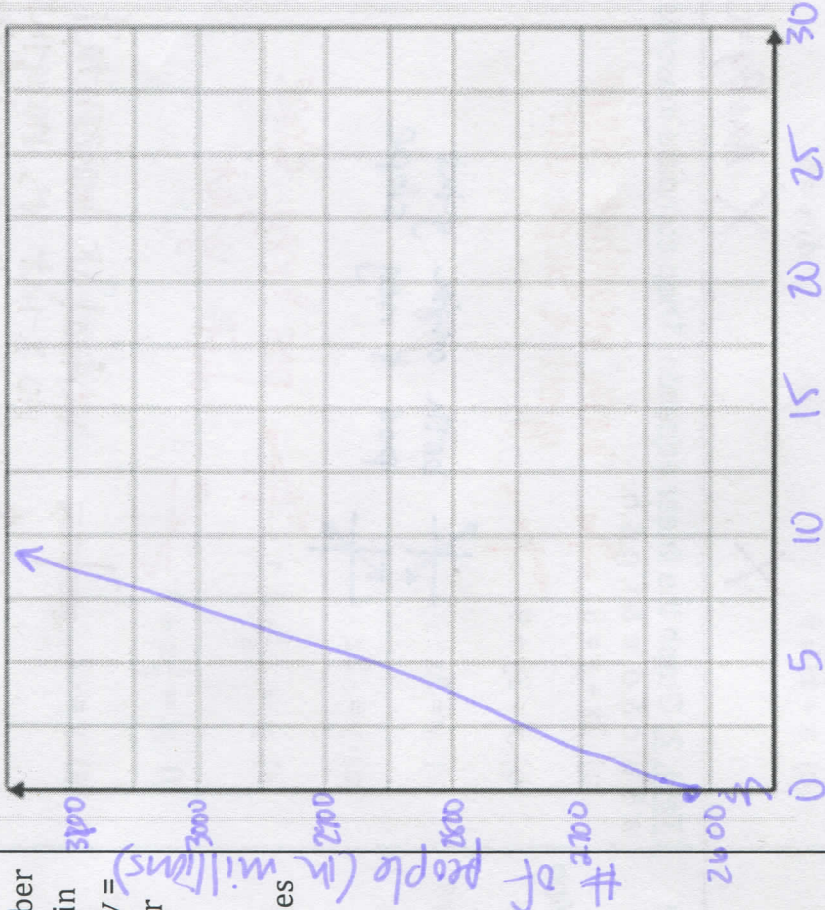
$$x = 10$$

$$58.1(10) + 2619$$

$$3200$$

3,200,000 NURSES

Number of Registered Nurses



Still need help with: