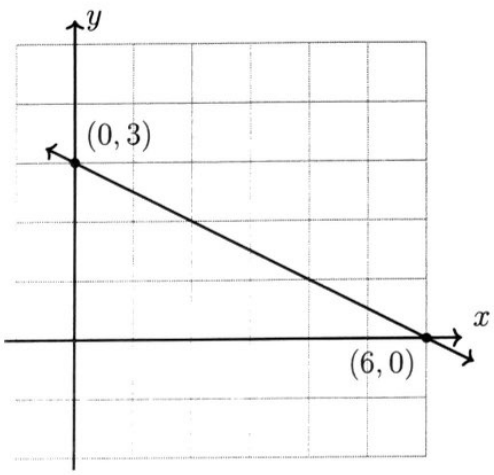
BECA / Dr. Huson / Geometry
Unit 8: Regents review
2 March 2023

Name: Solutions

8.5 Classwork: Analytic geometry **8.F.A.3**

1. A line is plotted in the graph below.



   (a) Write down the y-intercept of the line.

   $b = 3$

   (b) What is the slope of the line?

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

   (c) What is the x-intercept of the line?

   6

   (d) Write down its equation in slope-intercept form.

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

2. Find the slope of the line through the points $(-1, 4)$ and $(1, 6)$.

$$m = \frac{6-4}{1-(-1)} = \frac{2}{2} = 1$$

3. A line has a slope of $\frac{3}{5}$ and passes through the point $(10, 7)$.

   (a) Write the equation of the line in the form $(y - y_1) = m(x - x_1)$.

   $y - 7 = \frac{3}{5}(x - 10)$

   (b) Rewrite the equation of the line in the form $y = mx + b$.

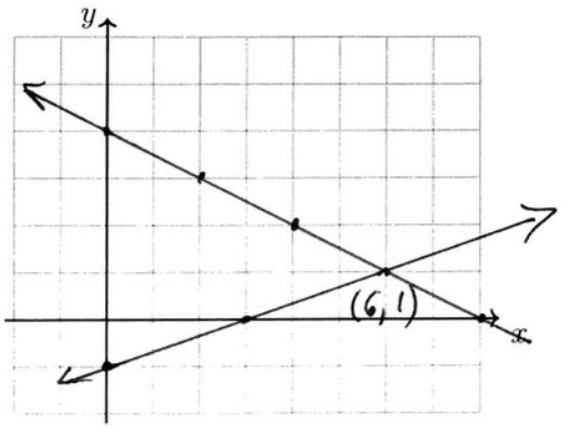
$$y - 7 = \frac{3}{5}x - 6$$
$$y = \frac{3}{5}x + 1$$

Systems of equations **HSG.REI.C.6**

4. Graph and label the two equations. Mark their intersection as an ordered pair.

$f(x) = -\frac{1}{2}x + 4$

$g(x) = \frac{1}{3}x - 1$



5. Dr. Huson buys six pizza pies for the Pi Day party, some plain, some special with all the toppings. Plain pizzas cost \$10 and "everything" pizzas \$15. The total cost was \$75. How many of each pizza did he buy?

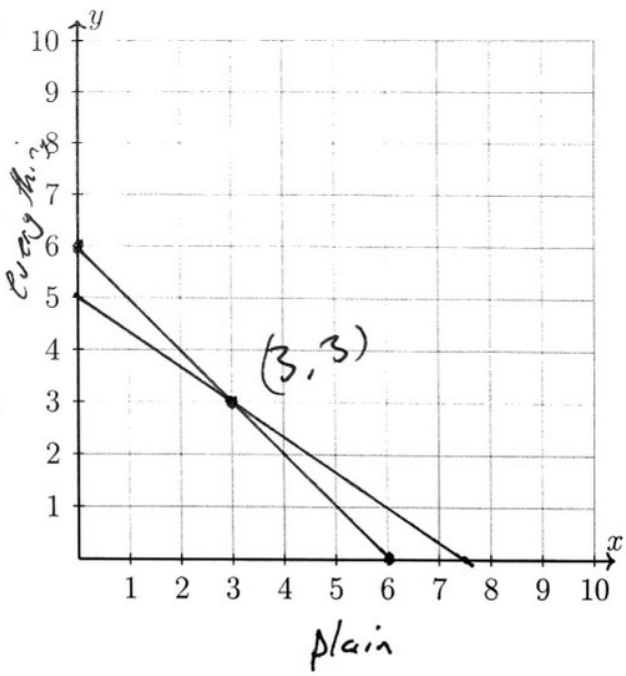
Let x be the number of plain pizzas and y be the number of pizzas with everything.

(a) Write an equation and graph a line to represent a total of six pizzas.

$x + y = 6$

(b) Make a second equation and line representing the \$75 total cost.

$10x + 15y = 75$



Solution: 3 plain pizzas, 3 everythings