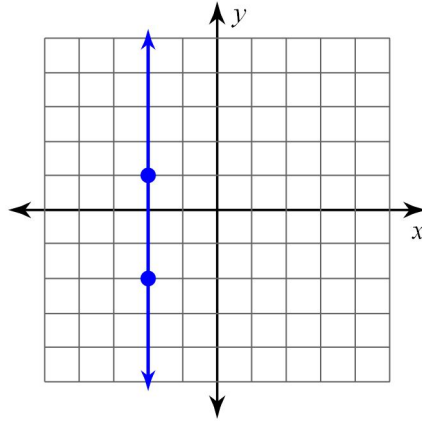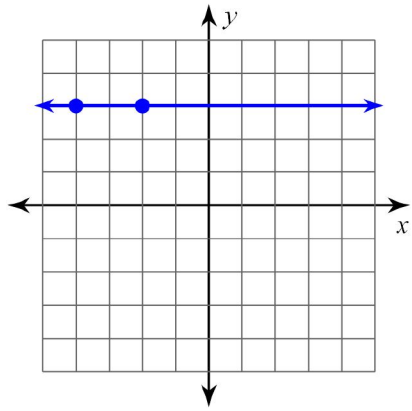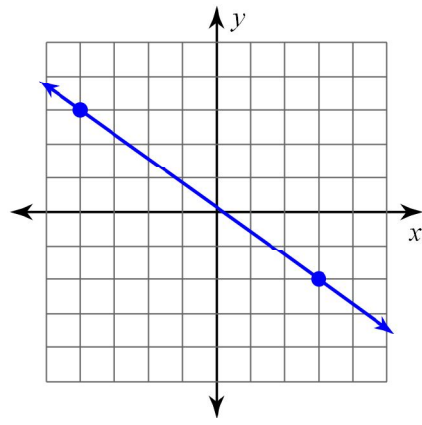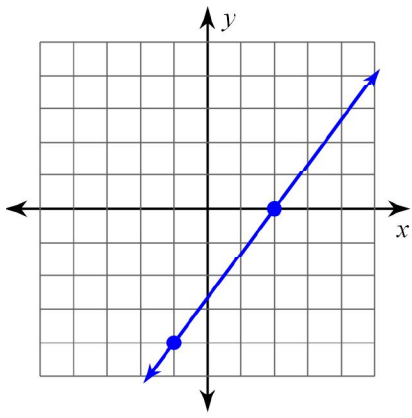# Mathematics 10D
Unit 1 – Systems of Linear Equations

Mr. D. Hagen

Mathematics 10D 1.0a – Slope, Graphing and Solving Equations

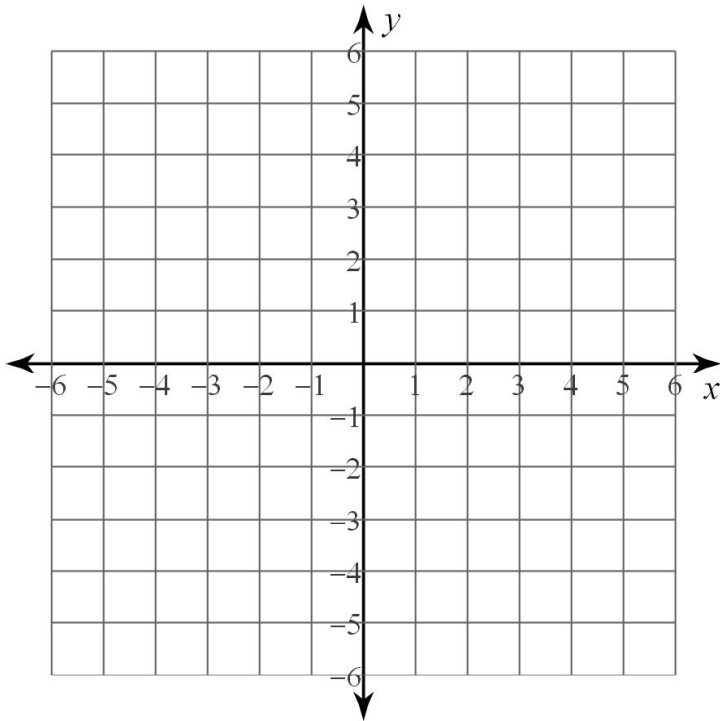To succeed in unit 1, you will need these skills:
1. Finding Slope
2. Graphing Linear Equations
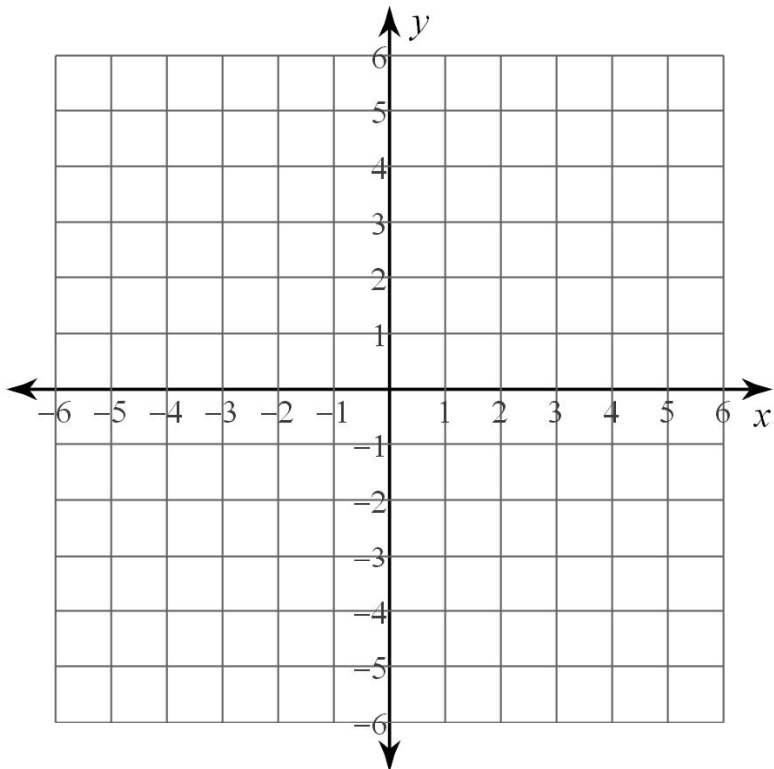3. Solving Equations
4. Writing Equations
5. Fractions

$$(-17, -9), (-11, 12)$$
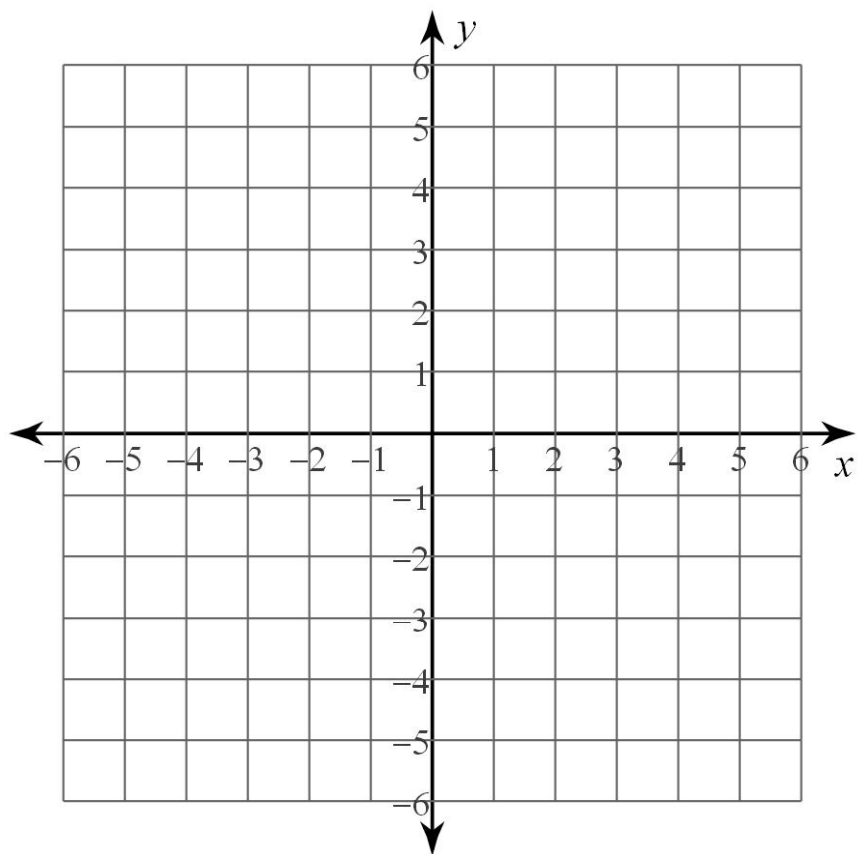
$$(18, 10), (16, 0)$$

$$y = -\frac{2}{5}x - 1$$

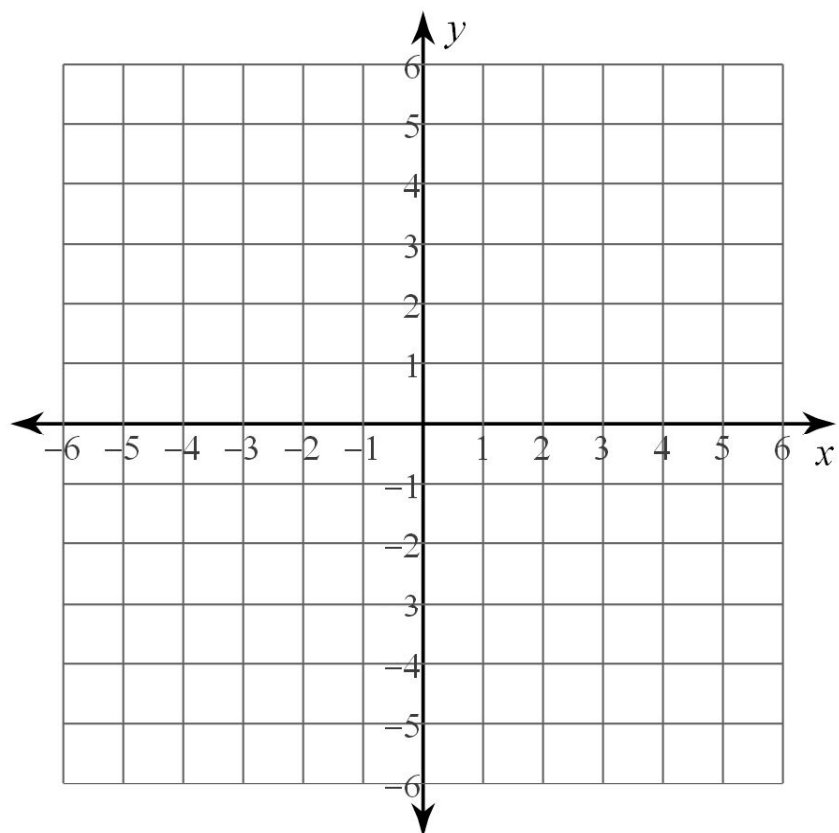$$y = \frac{2}{3}x - 5$$

$3x - 2y = -4$

$-4 + 2y = -6x$

$$x + 14 = 30 \qquad\qquad 240 = 15p$$
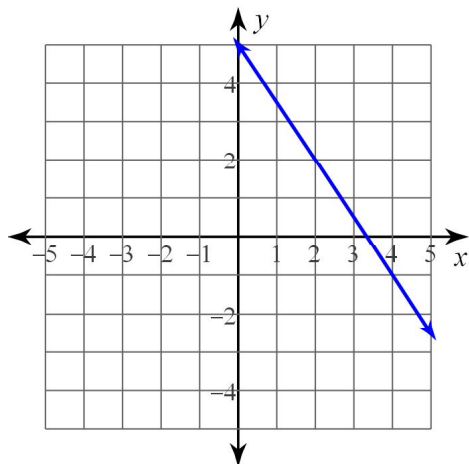
$$-\frac{5}{3} = \frac{n}{9} \qquad\qquad -70 = -8x + 10$$

$$-26.419 = -5.51 - 4.1x$$

$$-6 + 3(x + 5) = 6(x - 2)$$

Writing Equations From a Graph
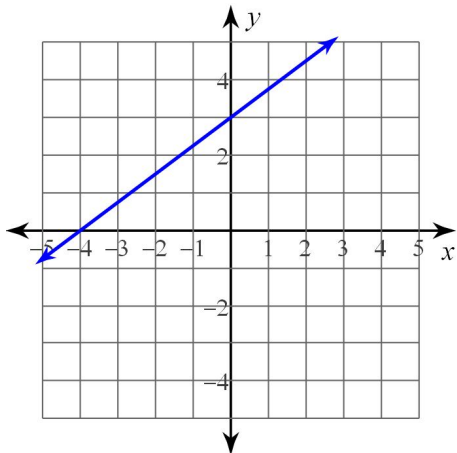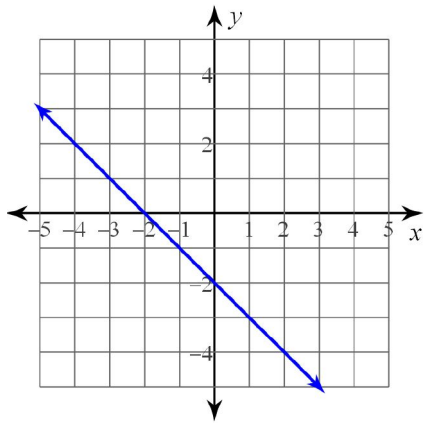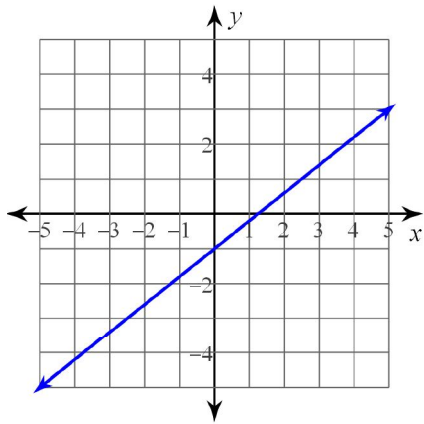
Given two points, find the equation of the line…

through: $(-1, 4)$ and $(-2, 3)$

through: $(3, -4)$ and $(0, 5)$

through: $(-3, -2)$ and $(4, -4)$

$$y = 2x + 2$$
$$y = -3x - 8$$
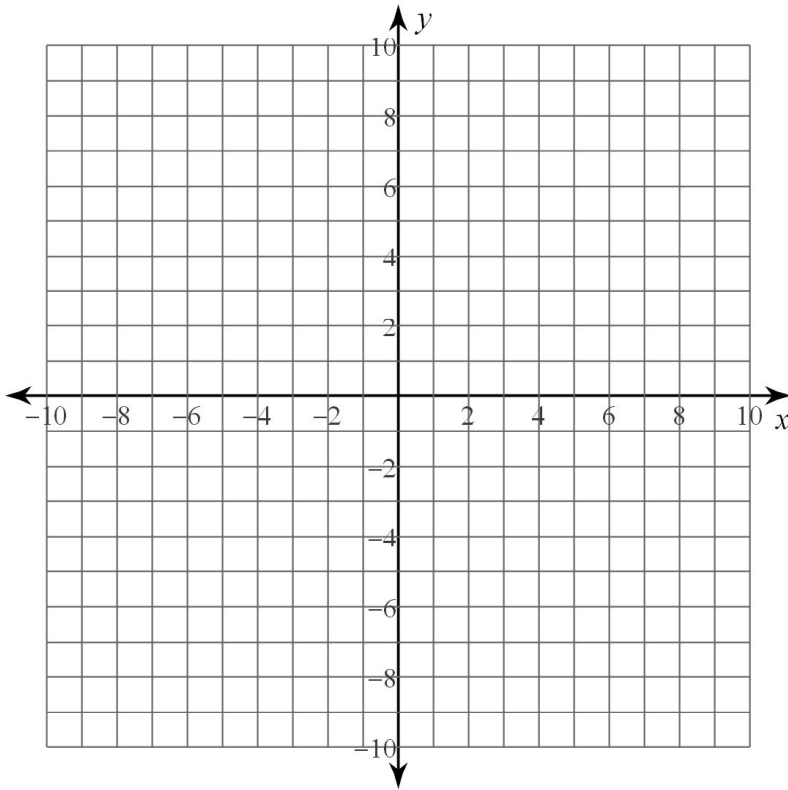
$$y = \frac{1}{6}x + 3$$

$$y = \frac{3}{2}x - 5$$
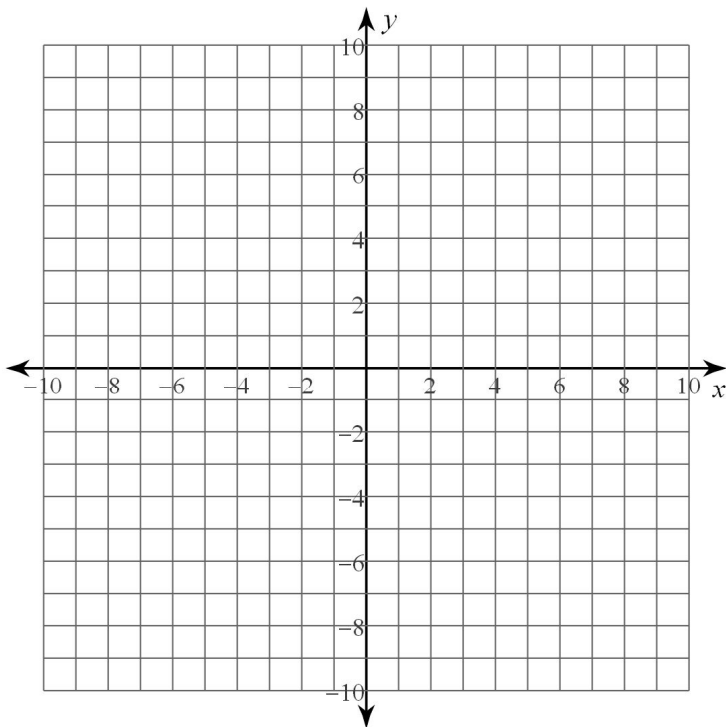
$x + 9y = -27$
$x + y = 5$
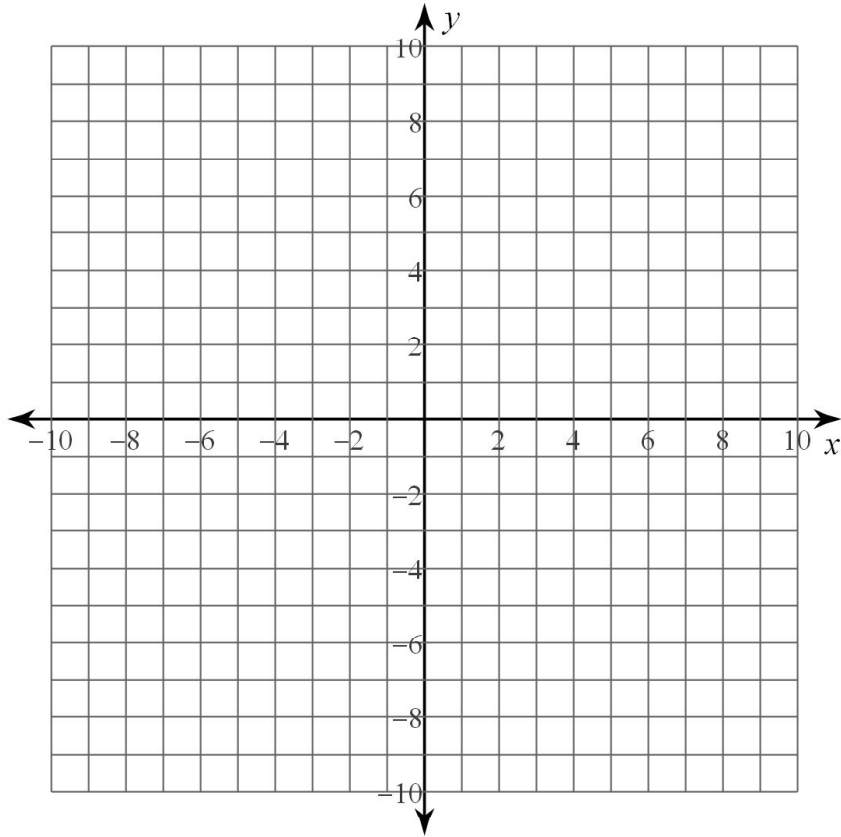
$x + 6y = 42$
$-2y = 2 + 3x$
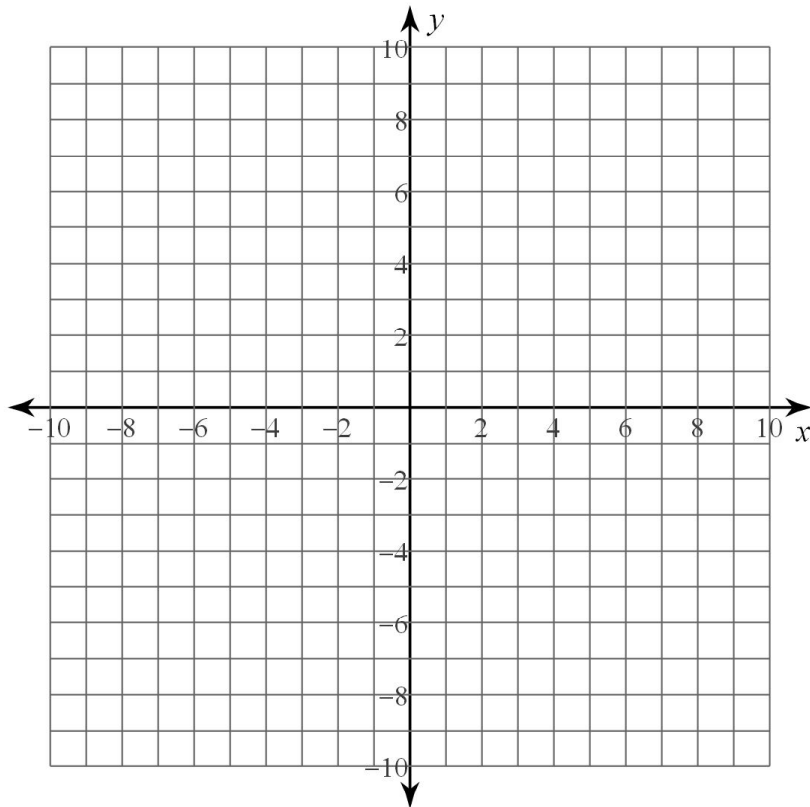
$y = 6x - 12$
$y = -5x + 21$

$5x + 4y = -9$
$y = 7x + 6$

$$x - 3y = -14$$
$$2x - y = -18$$

$$3x - 2y = 2$$
$$7x + 8y = -8$$

$$7x + 10y = -19$$
$$-6x - 10y = 12$$

$$4x + 5y = -29$$
$$4x + 4y = -28$$

$$10x - 2y = -4$$
$$-20x + 5y = 15$$

$$-6x + 8y = -2$$
$$-9x + 5y = -17$$

$$22 = -2x + 10y$$
$$-27y + 63 + 9x = 0$$

Mathematics 10D 1.7 – Solving Word Problems

Write a linear equation to represent each of the following situations:

1. A car rental company charges $50 to rent a car and $0.10 per km.

2. Every week, Steve earns 5% commission of his sales and $200.

3. Melanie buys new shirts and new "pants", totalling 12 new items.

1. Henry has 21 nickels and dimes in his change bowl at home totalling $1.50. How many of each coin does he have?

2. Lisa works hard in the summer and decides to invest $1000. She puts some of it in a conservative fund which earned 2% interest at the end of the year. She put the rest in a risky fund which ended up earning 11% at the end of the year. At the end of the year, she earned a total of $83. How much did she put into each account?

3. Jack and Jill are selling pies for a school fundraiser. Customers can buy pumpkin pies and rhubarb pies. Jack sold 17 pumpkin pies and 7 rhubarb pies for a total of $395. Jill sold 16 pumpkin pies and 5 rhubarb pies for a total of $340. What is the cost each of one pumpkin pie and one rhubarb pie?

4. Eugene's Premium Coffee Blend which costs $5.75/oz is made by combining arabica coffee beans which cost $8.75/oz with robusta coffee beans which cost $5.25/oz. Find the number of oz of arabica coffee beans and robusta coffee beans required to make 14 oz of Eugene's Premium Coffee Blend.