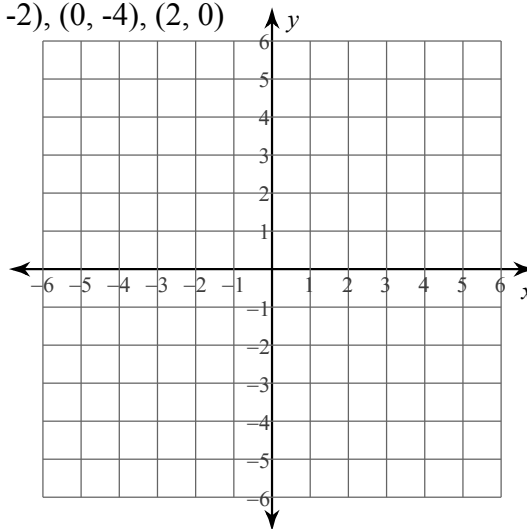


Practice Exam #2

Math 40 - Elementary Algebra

This Practice Exam and is NOT to be handed in. Attempt this exam multiple times until you feel prepared to take the Exam. Show as many steps as possible when simplifying and solving so that you get partial credit on the exam for work shown.

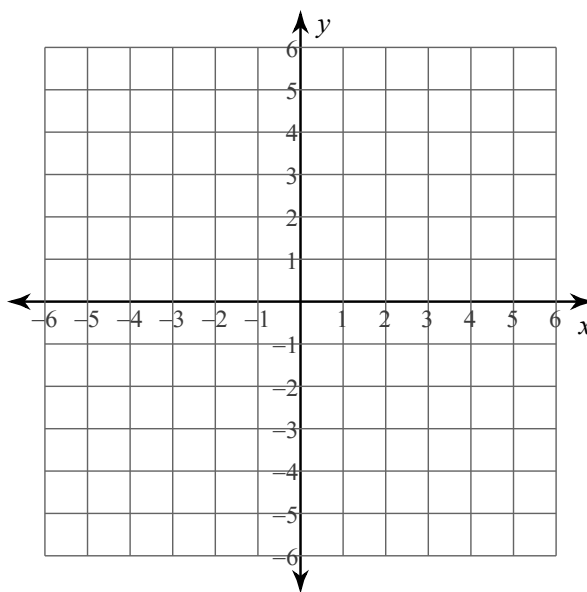
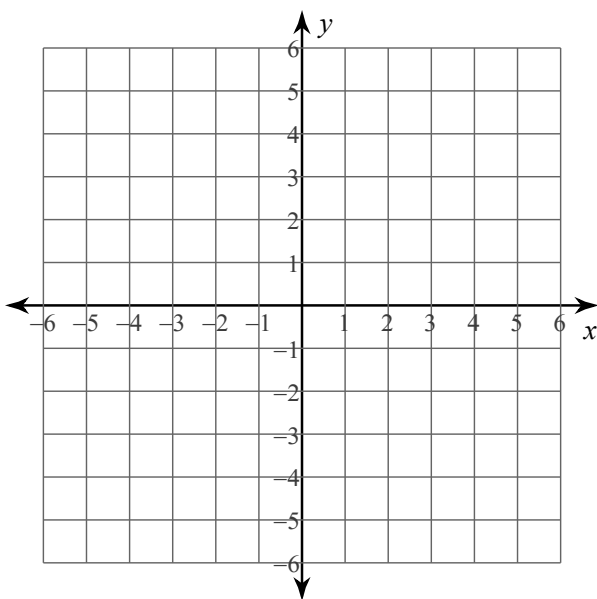
1. Plot the following points on the axis: $(6, 5)$, $(-2, 6)$, $(3, -2)$, $(0, -4)$, $(2, 0)$



2. Graph the following linear equation using one of the three methods learned in class.

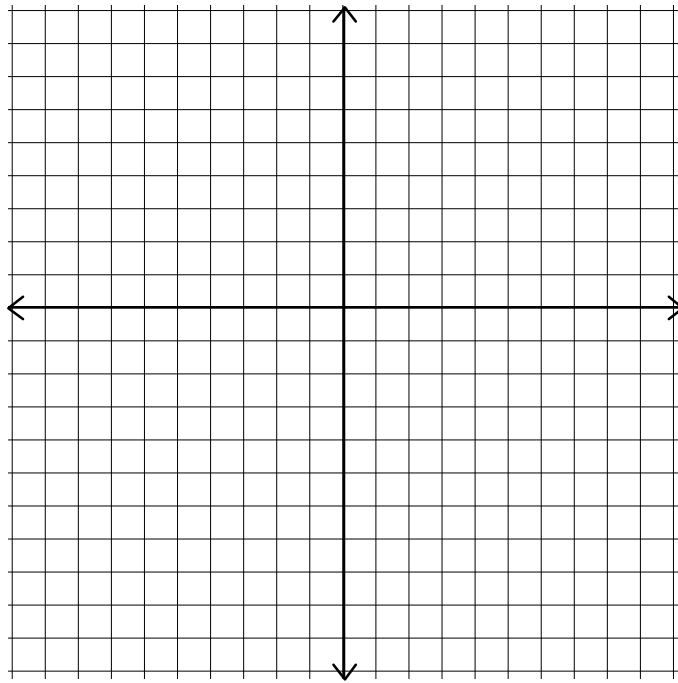
a. $y = -\frac{1}{2}x + 1$

b. $3x - 2y = 6$



3. Find the equation of the line through $(0, -9)$ with slope $m = -\frac{3}{2}$

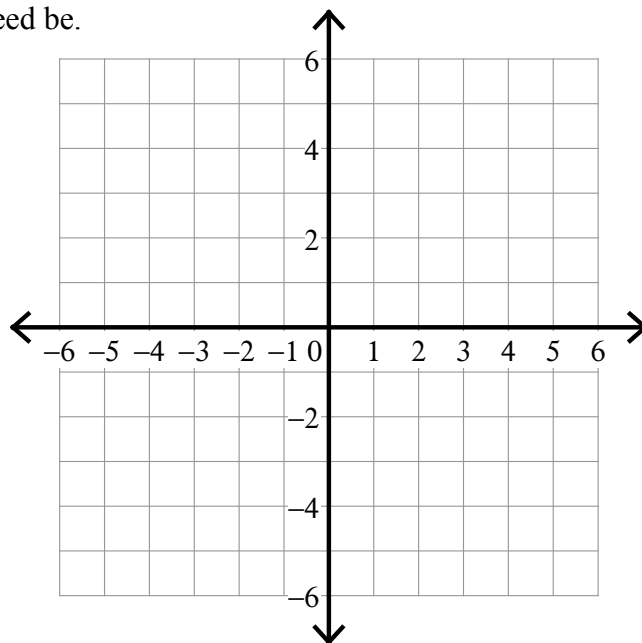
4. Given the two points $(-3, 7)$ and $(6, 1)$
- Use algebra to determine the whole **equation** of the line in **slope-intercept** form that passes through the points
 - Accurately graph the equation found in part a. above by using the slope and y intercept or plotting points or plotting both of the intercepts (**Be sure to label and scale the axes**).



5. Determine the **SLOPE** of the line
- parallel to $4x - 5y = 11$
 - perpendicular to $2y + 4x = -28$

6. Graph the following two-variable inequality. **Shade the graph in the appropriate area** to represent the solution. Pick a test point if need be.

$$3x - 2y > 4$$



7. Determine whether the ordered pair $(-3, 4)$ is a solution to the system. You do not need to solve, **just check**, use proper notation, and answer in a sentence.

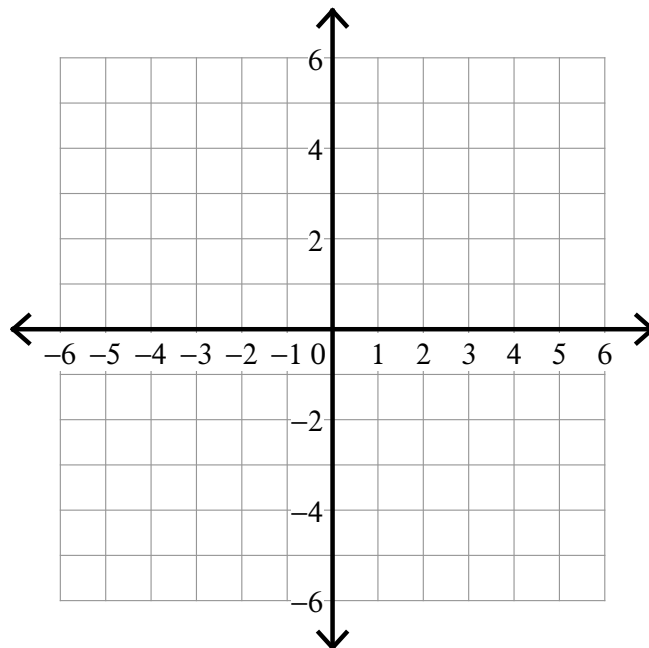
$$x + y = 1$$

$$x - y = -5$$

8. Solve the following system $4y = 5x + 8$ and answer appropriately
 $5x - 4y = 12$

a. graphically

b. substitution or elimination/addition

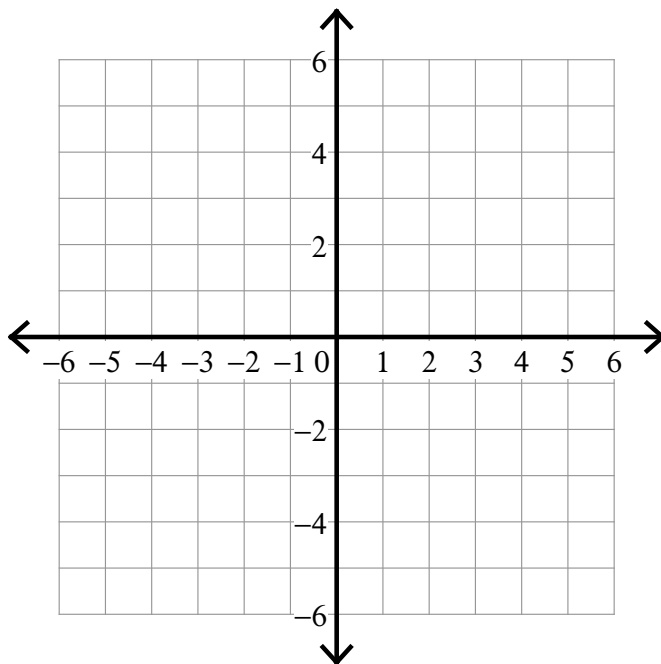


9. Solve the following system $3y = x + 6$ using all three methods and answer appropriately
 $y + 2 = -x$

a. graphically

b. substitution

c. elimination/addition



10. Solve the following system using

$$x = -7y - 32$$

$$-8x - 56y = 256$$

a. substitution

b. AND elimination

Study section 2.5/2.6/4.4 lecture notes, homework and quiz! There will be similar word problems on exam and you MUST use 5-step process as we did in class!!

5-Step Problem Solving Process

1. Declare Variables
2. Equation
3. Solve it!
4. Check it!
5. Say it!

Examples directly from notes:

Lecture Notes Examples - Applications – Sections 2.5

Number Problems

1. The sum of twice a number and four is fourteen. Find the number.
2. One number is three less than another. Their sum is fifteen. Find both numbers.

Perimeter Problems

3. The width of a rectangle is 3 feet less than the length. The perimeter is 10 feet. Find the length and width.
4. One side of a triangle is three times the shortest side. The third side is 7 feet more than the shortest side. The perimeter is 62 feet. Find all three sides.

Coin Problems

5. Marissa has \$4.40 in quarters and dimes. If she has 5 more quarters than dimes, how many of each coin does she have?
6. Billy Bob has \$1.55 in dimes and nickels. If he has 7 more nickels than dimes, how many of each coin does he have?

Lecture Notes Examples - Applications – Section 2.6

Consecutive Integer Problems

1. The sum of two consecutive integers is 27. What are the two integers?
2. The sum of three consecutive odd integers is 57. Find the numbers.

Triangle Problems

3. The angles in a triangle are such that one angle is three times the smallest angle, whereas the largest angle is five times the smallest angle. Find the measure of all three angles.

Count and Amount Problems

4. Tickets to a community theater cost \$10 for adults and \$6 for children. A total of \$680 was collected for one evening performance. If 20 more adults attended than children, how many adults and children attended the show?

Interest Problems

5. Suppose you invest a certain amount of money in an account that earns 8% in annual interest. At the same time, you invest \$2,000 more than that in an account that pays 9% in annual interest. If the total interest from both accounts at the end of the year is \$690, how much is invested in each account?

Lecture Notes Examples - Applications – Section 4.4

Number Problems

1. One number is 3 more than twice another. Their sum is 9. Find the numbers. Answers: 2 and 7

Interest Problems

2. Amy has \$10,000 to invest. She invests part at 6% and the rest at 7%. If she earns \$630 in interest for the year, how much does she have invested at each rate? Answers: \$7000 and \$3000

Mixture Problems

3. How much of a 20% alcohol solution and 50% alcohol solution must be mixed to get 12 gallons of 30% alcohol solution? Answers: 4 gal and 8 gal

Coin Problems

4. John has \$1.70 in dimes and nickels. He has a total of 22 coins. How many of each type of coin does he have? Answers: 12 dimes 10 nickels

***** All material since Exam 1 is fair game for the exam. Please study old quizzes, worksheets and returned work in addition to this practice exam*****