

Math 105: Sample Skill Quiz 1
Algebraic Equations

1. Consider the following seven mathematical statements:

A. $3x^2 + 5 = 2x$

B. $\frac{6}{x^2} + 1 = \frac{-5}{x}$

C. $3 - x^5 = 35$

D. $\sqrt[2]{3 - 2x} + 5$

E. $23 - 3|x - 5| = 5$

F. $\sqrt[2]{x + 7} + 1 = 2x$

G. $4x - 3 = 21 - 4x$

Please match the given algebraic statements with the proper names for these statements below. Also, please write a short description under each of your choices to explain your reasoning why you made the choice you did.

Linear equation _____

Radical equation _____

Absolute value equation _____

Quadratic equation _____

Rational equation _____

Power equation _____

Algebraic expression _____

Name: _____

Class #: _____

2. Use any algebraic technique (and show your work) to solve the equation:

$$x - 6 = 3 \cdot (2 - x)$$

3. Use any algebraic technique (and show your work) to solve the equation:

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

2. Use a graphical technique to solve the equation:

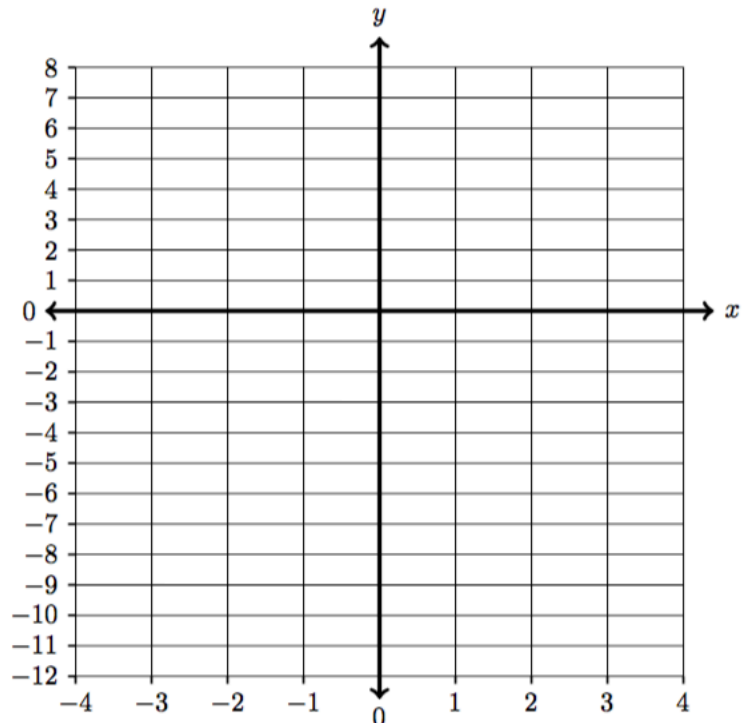
$$x - 6 = 3 \cdot (2 - x).$$

Make sure to demonstrate all five steps of this process. You are welcome to use your calculator.

- Step 1: Identify and graph the function on the left-hand side of the equals sign.
- Step 2: Identify the function on the right-hand side of the equals sign and graph this function on the same axis you used in step 1.
- Step 3: Find the point(s) of intersection between the graphs of the two functions.
- Step 4: Write each point of intersection as an ordered pair in the form (x, y) .
- Step 5: Set the variable from the equation equal to the 1st coordinate of each point of intersection. Your final solution should be in the form variable = number

Please specifically identify each point of intersection on your graph. Also, please write each of these points as an ordered pair with an x -coordinate and y -coordinate. Use this information to find a solution to this algebraic equation.

	<i>LHS of Equals Sign</i>	<i>RHS of Equals Sign</i>
x		
-4		
-3		
-2		
-1		
0		
1		
2		
3		
4		



Use a graphical technique to solve the equation:

$$x - 1 = x^2 + 2x - 7.$$

Make sure to demonstrate all five steps of this process (you are welcome to use your calculator).

Please specifically identify each point of intersection on your graph.

Please write each of these points as an ordered pair with an x -coordinate and y -coordinate.

Use this information to find a solution to this algebraic equation.

	<i>LHS of Equals Sign</i>	<i>RHS of Equals Sign</i>
x		
-4		
-3		
-2		
-1		
0		
1		
2		
3		
4		

