

NAME: \_\_\_\_\_ Score \_\_\_\_\_/10

Please **print** your name**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

1. (1 pt.) Two equations are equivalent if they have the same solution sets.
2. (1 pt.) An equation is a mathematical statement which contains an = symbol.
3. (1 pt.) If an expression is added to both sides of an equation the resulting equation is equivalent to the original equation.
4. (1 pt.) T      F       $3x^2 - 5x + 9$  is an equation..
5. (1 pt.) T      F       $3x + 5 = 0$  is a linear equation in one variable.
6. (1 pt.) T      F      Division of zero by 7 is undefined

7. (2 pts.) Show that -1 is not a solution of  $x^5 + x^4 - x^3 = -1$

Replacing x with -1 produces  $(-1)^5 + (-1)^4 - (-1)^3 = -1$  which is false.  
Therefore -1 is not a solution of the equation.

8. (1 pts.) What is the relation between the equation  $3x + 5 = 7$  and the equation  $5x + 6 = 2x + 8$  obtained by adding  $2x + 1$  to both sides of the original equation.

They are equivalent.

9. (1 pts.) A linear equation in one variable may have how many solutions? Discuss all possibilities.  
A linear equation in one variable which is a conditional equation has exactly one solution.  
A linear equation in one variable which is a contradiction has no solutions.  
A linear equation which is an identity has infinitely many solutions (every real number is a solution.)

10. (1 pts.) If a and b are real numbers and  $a < b$ , then a is to the left of b on the number line.