

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

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

1. Two equations are **equivalent** if they have the same solution sets.
2. The formula for the area of a circle with radius  $r$  is:  **$A = \pi r^2$** .
3. If  $\mathbf{Q}$  is the set of rational numbers and  $\mathbf{F}$  is the set of irrational numbers, then  **$\mathbf{R} \cap \mathbf{F} = \mathbf{F}$** .
4. **T** **F** If the same non-zero real number is added to both sides of an equation the resulting equation is equivalent to the original.
5. **T** **F**  $x + 2 = 3$  and  $\sqrt{5}x + 2\sqrt{5} = 3\sqrt{5}$  are equivalent equations.
6. **T** **F**  $x^2 = x$  and  $x = 1$  are equivalent equations.
7. **T** **F** The area of a triangle with base  $b$  and height  $h$  is given by the formula  $A = \frac{1}{3}bh$ .
8. Use interval notation to describe the set  $\{x \in \mathbf{R} \mid 2 \leq x < 5\} = [2, 5)$

9. (2 pts). Parade floats travel down a 7.5 mile-long parade route at a rate of 2.5 mph. How long will it take a float to complete the parade if there are no delays? Make sure you show the details. Your analysis should make it clear how you obtained the model/equation. Write your conclusion in ordinary English.

**Use  $d = rt$**  **$7.5 = 2.5t$  Solve for  $t$  by dividing both sides by  $t$**  **$T = 3$** **It will take 3 hours to complete the parade route.****An alternate presentation****Use  $d = rt$** **A given fact is that  $d = 7.5$** **If the rate is 2.5, then  $d = 2.5t$** **Since these last two expressions represent the same quantity they must be equal** **$7.5 = 2.5t$  which may be solved for  $t$  to obtain** **$t = 3$** **It will take three hours to complete the parade route.**

