

NAME: \_\_\_\_\_ Score \_\_\_\_\_/10  
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**SHOW ALL YOUR WORK IN A NEAT AND ORGANIZED FASHION**

1. **T F** If both sides of an equation are squared, the resulting equation is equivalent to the original equation.
2. **T F** If a non-zero real number is added to both sides of an equation, the resulting equation is equivalent to the original equation.

3. Solve the equation  $A = \frac{1}{2}(b_1 + b_2)h$  for h.

$$\begin{aligned} A &= \frac{1}{2}(b_1 + b_2)h \\ 2A &= (b_1 + b_2)h \\ \frac{2A}{(b_1 + b_2)} &= h \end{aligned}$$

4. The conjugate of  $3 - 8i$  is  $3 + 8i$

5. Compute the product  $(3 + 2i)(2 + 5i) = (3)(2) + (3)(5i) + (2i)(2) + (2i)(5i)$   
 $= 6 + 15i + 4i + 10i^2$   
 $= 6 + 15i + 4i - 10$   
 $= -4 + 19i$

6. Describe the graph of the equation  $x^2 + y^2 = 49$   
**The graph of  $x^2 + y^2 = 49$  is the circle with center at the origin and radius 7.**

7. Write the formula for the volume of a cone with radius 3 and height h.

$$\text{Use } V = \frac{1}{3}\pi r^2 h \text{ to obtain } V = \frac{1}{3}\pi 3^2 h = 3\pi h$$

8. Write the interval  $(2, 5]$  in set builder notation.

$$(2, 5] = \{ x \mid 2 < x \leq 5 \}$$

9. State the Zero Factor Property

**If a and b are real numbers such that  $ab = 0$ , then  $a = 0$  or  $b = 0$ .**

10. Write the formula for the area of a circle.

**The area A of a circle of radius r and is given by  $A = \pi r^2$**