

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 $(2 + 3i)(4 + 5i) = (2)(4) + (2)(5i) + (3i)(4) + (3i)(5i)$
 $= (8 - 15) + (10 + 12)i = -7 + 22i$

6. Describe the graph of the equation $(x + 5)^2 + y^2 = 36$
The graph of $(x + 5)^2 + y^2 = 36$ is the circle with center $(-5, 0)$ and radius 6.

7. Write the formula for the volume of a cylinder with radius 3 and height h.
Use $V = \pi r^2 h$ to obtain $V = \pi 3^2 h = 9\pi h$

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 circumference of a circle.
For a circle with radius r the circumference C is given by $C = 2\pi r$.
Or you could have written
For a circle with diameter D the circumference C is given by $C = \pi D$.