

Name _____

**Practice Quiz on Prerequisites
Calculus**

1. Write the equation of the line that goes through (4, -1) and is parallel to $3x + 4y = 12$.

2. Solve for x: $|2x - 4| = 4 - 2x$. Write in interval form.

3. For which values of x is $|x^2 - 5x + 6| = x^2 - 5x + 6$? Write in interval form.

4. Find all values of x for which the given expression yields a real number:

$$\sqrt{x^2 + 7x + 12}$$

5. Solve the inequality and write in interval form: $x^2 < 25$

6. Find the exact values of all six trigonometric functions of θ if $\cot \theta = \frac{2}{5}$

$$\left(0 \leq \theta \leq \frac{\pi}{2}\right)$$

7. Find the value of all six trigonometric functions of θ using the unit circle if:

a) $\theta = -\frac{\pi}{3}$

b) $\theta = \frac{5\pi}{2}$

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8. Write as a piecewise function: $f(x) = |x^2 + 7x + 12|$

9. Solve and write the solution for x in interval form: $\frac{x^3 - 4x}{x - 3} \leq 0$

10. Given $f(x) = x^2 - 2$ and $g(x) = x - 5$, find

a) $f(g(x))$

b) $g(f(1))$

11. Let $h(x) = f(g(x))$. If $h(x) = \frac{4}{(x-6)^2}$ identify

a) $f(x)$

b) $g(x)$