Entering Precalculus

Summer Assignment 2025

Attached is your summer assignment. It is due on the first day of class. I will check for completeness and correctness. These are skills I expect you to know. After a brief review, there will be a quiz on this material. **NO calculator is allowed!**

BE READY--Start the year off right!

1. Write using interval notation:

$$-3 < x \leq 5$$

2. Write using interval notation:

$$x > 1$$

3. Write using interval notation:

$$x \leq -6$$

4. Write using fractional exponents:

a) $f(x) = \sqrt{5x - 7}$

b) $g(x) = \frac{2}{\sqrt[3]{x}}$

5. Find the midpoint of the line segment with the given endpoints (no decimals):

(1, 5) and (-4, -8)

6. FInd the slope of the line through the given points:

a. (-7, -3) and (-7, 9)

b. (-12, 19) and (2, 18)

c. (-4, 6) and (-1, 6)

7. Determine the equation of the line perpendicular to -3x + 4y = 6 through the point (6, 0). GIVE YOUR ANSWER IN POINT-SLOPE FORM!!!

8. Solve the equation by factoring.

$f(x) = x^2 - 6x$

9. Solve the equation by factoring:

$f(x) = x^2 + 4x - 45$

10. Solve the equation:

$$|3x - 9| = 6$$

11. Simplify-no negative exponents:

$$\left(\frac{-3x^2}{y^{-3}}\right)^3$$

12. Simplify-no negative exponents:

$$\frac{(x^{-3}y^2)^2}{(x^3y^4)^{-3}}$$

13. What number (or numbers) would NOT be in the domain of this function? Write your answer in interval notation.

$$f(x) = \frac{2}{(x-6)}$$

14. If $f(x) = \frac{2x}{(x+5)^2}$

Find the following. SIMPLIFY YOUR ANSWERS AS MUCH AS POSSIBLE:

a) $f(0)$

b) $f(a)$

c) $f(a - 5)$

15. If $f(x) = 2x^2 - x - 2$

Find the following. SIMPLIFY YOUR ANSWERS AS MUCH AS POSSIBLE:

a) $f(-1)$

b) $f(a)$

c) $f(a - 3)$

16. Simplify:

a. $g(x) = \sqrt{(x + 3)^2}$

b. $g(x) = \sqrt{x^2 + 25}$

17. If you walk 15 miles in 5 hours, what is your rate?

18. Is this relation a function? Why or why not?

Input, x	Output, y
2	11
2	10
3	8
4	5
5	1

19. Draw the graph of the given equation. Is this a function?

$$x^2 + y^2 = 25$$

20. Find the values of x for which $f(x) = g(x)$.

$f(x) = x^2 + 1$ and $g(x) = 3x - x^2$