Name: _____ **Per.** ____

Pre-Calculus Test Chapter 0 **Form A** **Show ALL work!!!**

1 Rationalize the denominator of the expression. Then simplify your answer.

$$\frac{2}{5-\sqrt{3}}$$

2 Simplify.

$$\sqrt[3]{8\times 10^{15}}$$

3 Factor.

$$15x^2-11x+2$$

4 Simplify.

$$\frac{x^2-14x+49}{x^2-49}\div\frac{3x-21}{x+7}$$

5 Rewrite the expression in radical form.

$$81^{\frac{3}{4}}$$

6 Factor completely.

$$16x^2-\frac{1}{9}$$

7 Solve the equation and check your solution.

$$\frac{3}{x^2-3x}+\frac{4}{x}=\frac{1}{x-3}$$

8 Simplify.

$$\frac{\left(\frac{x}{2}-1\right)}{(x-2)}$$

9 Simplify the radical expression.

$$\sqrt[5]{160x^8z^4}$$

10 Solve the equation and check your solutions.

$$(x-5)^{\frac{3}{2}}=8$$

11 Simplify the radical expression.

$$10\sqrt{32}-6\sqrt{18}$$

12 Factor completely.

$$27x^3+8$$

13 Simplify the expression.

$$\sqrt{\sqrt{32}}$$

14 Determine which number in the setare natural numbers, integers, ratonial numbers, and irrational numbers.

$$\sqrt{5},\ -7,\ -\frac{7}{3},\ 0,\ 3.12,\ \frac{5}{4},\ -3,\ 12,\ 5$$

Natural Numbers:

Integers:

Rational Numbers:

Irrational Numbers:

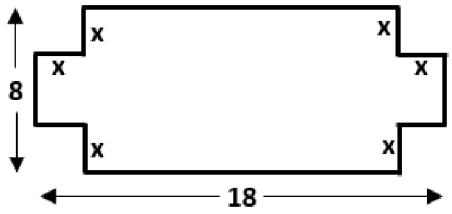
15 Use the quadratic formula to solve.

$2+2x-x^2=0$

16 Solve by <u>completing the square</u>.

$x^2-2x-3=0$

17 **Geometry** Write an expression in <u>factored</u> form for the area of the figure.



18 Solve. **Note:** Don't forget to check for extraneous solutions.

$\sqrt{2x+7}-x=2$

19 Find the greatest common factor such that the remaining factors have only integer coeeficients.

$\frac{1}{3}y^2-5y+2$

20 **Geometry** Find the ratio of the area of the shaded portion of the figure to the total area of the figure.