

Name: _____

Date: _____

QUIZ

Calculus: Functions

Review Concepts

Problem Solving

Directions:

You have 20 minutes to:

- o Analyze the equations and draw the graph of the function $f(x)$. Use an arbitrary function. Use rules, theorems, or properties when they apply to the function.

Grade: _____

Teacher's Signature: _____

1. Analyze the following equations and draw the graph. Use an arbitrary function $f(x)$.

$$y := x^2$$

$$y := x^2 - 2$$

$$x := y^2 - 2$$

$$y := \sqrt{x}$$

$$y := \sqrt{x + 2}$$

$$y := -\sqrt{x + 2}$$

2. Analyze the following equations and draw the graph. Use an arbitrary function $f(x)$.

$$y := x$$

$$y := x^2$$

$$y := x^3$$

$$y := x^4$$

$$y := x^5$$

$$y := 1^x$$

3. Analyze the following equations and draw the graph. Use an arbitrary function $f(x)$.

$$y := \sin(x) \quad (0, 4\pi)$$

$$y := \cos(x) \quad (0, 4\pi)$$

$$y := \tan(x) \quad (-2\pi, 2\pi)$$

HINT: Pay close attention to the interval where the function $f(x)$ has been defined.

4. Transformation of Functions: Stretch - Compress - Reflect

Analyze the following equations and draw the graph. Use an arbitrary function $f(x)$. Indicate the transformation.

$y := f(x)$ for all x Draw $y := cf(x)$

$y := f(x)$ for all x Draw $y := \frac{1}{c} f(x)$

$y := f(x)$ for all x Draw $y := -f(x)$

$y := f(x)$ for all x Draw $y := f(-x)$

5. Analyze the following equations and draw the graph. Use an arbitrary function $f(x)$. HINT: remember $y := x^2$

$$y := (x + 3)^2 + 1$$

$$y := x^2 - 1$$

$$y := |x^2 - 1|$$