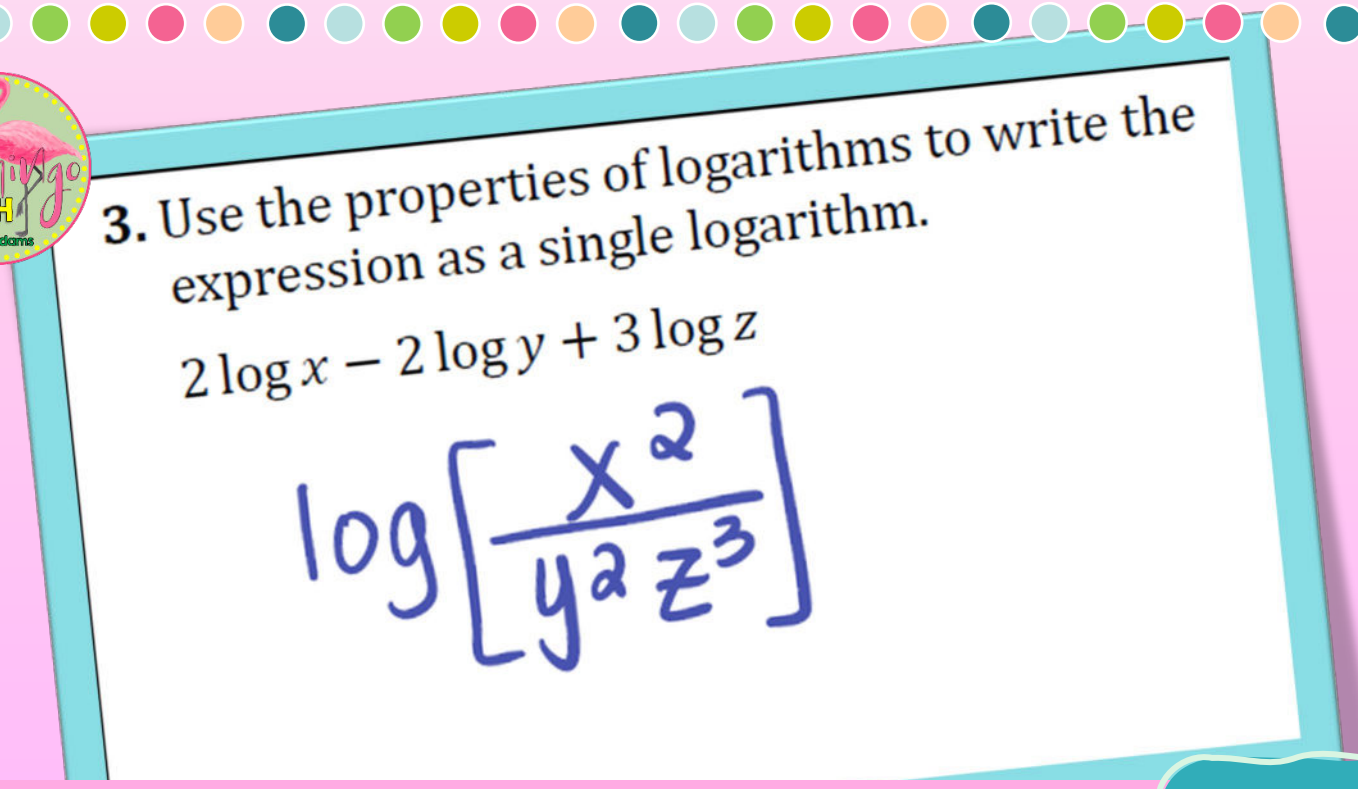
Precalculus Honors

Exponential Logistic & Logarithmic Functions



Warm-Ups 3

Completely Editable

PRECALCULUS CURRICULUM

Scope and Sequence

Unit 3: Exponential, Logistic & Logarithmic Functions

Lesson	Skills & Learning Objectives
[3.1] Exponential & Logistic Functions	▪ Investigate the basic behaviors of exponential functions, logistic functions, and their graphs ▪ Analyze the function behavior related to population models ▪ Analyze exponential and logistic graphs for domain, range, end-behavior, continuity, symmetry, asymptotes, increase and decrease.
[3.2] Logarithmic Functions & Their Graphs	▪ Convert equations between logarithmic form and exponential form ▪ Evaluate common and natural logarithms ▪ Graph common and natural logarithmic functions ▪ Solve problems involving exponential and logarithmic expressions
[3.3] Properties of Logarithmic Functions	▪ Apply the properties of logarithms to evaluate expressions and graph functions ▪ Use properties of exponents and logarithms to simplify and evaluate expressions
[3.4] Equation Solving – Logarithmic Functions	▪ Apply the properties of logarithms to solve exponential and logarithmic equations algebraically ▪ Solve exponential and logarithmic equations related to real-world scenarios
[3.5] Exponential, Logistic & Logarithmic Modeling	▪ Use exponential growth, decay, and regression to model real-life problems.
[3.6] Analyzing Exponential Graphs	▪ Use properties of exponents to analyze the behavior of an exponential function without the aid of a calculator.

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Name _____ Date _____ Period _____

Lesson 3.I: Exponential and Logistic Functions: Warm-Up # 1

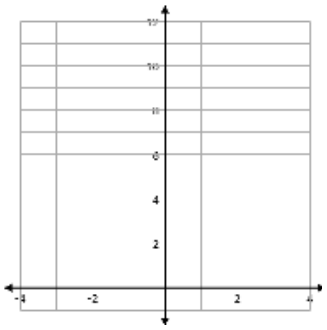
1. Find the exact value of the function without using a calculator. Given:

$$f(x) = 4 \cdot 2^x \text{ for x} = -2$$

2. Describe the transformation of $f(x) = e^x$ to $g(x) = -2e^x + 3$

3. State the initial value and the base of $f(x) = 2(\frac{1}{4})^x$

4. Sketch the graph from #3.



Name _____ Date _____ Period _____

Lesson 3.I: Exponential and Logistic Functions: Warm-Up # 2

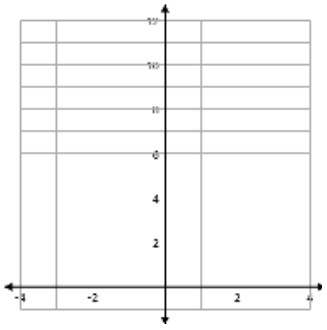
1. Find the exact value of the function without using a calculator. Given:

$$f(x) = 6 \cdot 3^x \text{ for x} = -3$$

2. Describe the transformation of $f(x) = e^x$ to $g(x) = 3e^{x-2} + 1$

3. State the initial value and the base of $f(x) = 3(\frac{1}{3})^x$

4. Sketch the graph from #3.



Name _____ Date _____ Period _____

Lesson 3.2: Logarithmic Functions and Graphs: Warm-Up # 1

1. Evaluate without using a calculator

$\log_5 125$

2. Evaluate without using a calculator

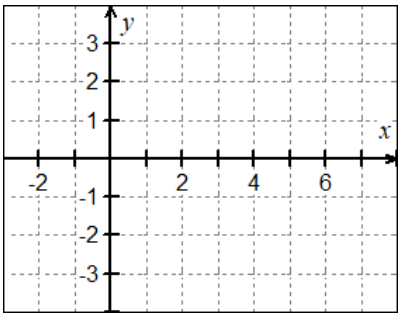
$\log_5 \frac{1}{\sqrt[4]{125}}$

3. Solve the equation by changing it to exponential form.

$\log(x) = -1$

4. Sketch

$f(x) = \ln(x-1)$



Name _____ Date _____ Period _____

Lesson 3.2: Logarithmic Functions and Graphs: Warm-Up # 2

1. Evaluate without using a calculator

$\log_6 216$

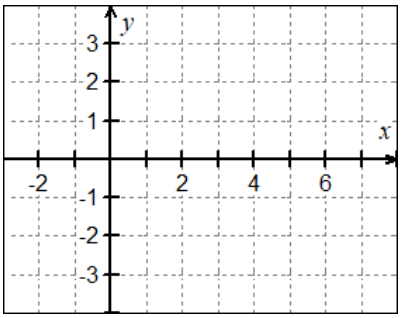
2. Evaluate without using a calculator

$\log_6 \frac{1}{\sqrt[4]{216}}$

3. Solve the equation by changing it to exponential form.

$\log(x) = \frac{1}{2}$

4. Sketch $f(x) = \ln(x+1)$



Name _____ Date _____ Period _____

Lesson 3.4: Equation Solving and Modeling: Warm-Up # 1

1. Find the exact solution algebraically.

$4^x = 256$

2. Find the exact solution algebraically.

$\log_3(x-4) = -1$

3. Find the approximate solution to three decimal places.

$6(2^x) = 36$

4. Find the approximate solution to three decimal places.

$5 - 2e^{-x} = -7$

Name _____ Date _____ Period _____

Lesson 3.4: Equation Solving and Modeling: Warm-Up # 2

1. Find the exact solution algebraically.

$2^x = 64$

2. Find the exact solution algebraically.

$\log_5(x-2) = -1$

3. Find the approximate solution to three decimal places.

$4(5^x) = 60$

4. Find the approximate solution to three decimal places.

$4 - 3e^{-x} = -8$