

# Test Review

Monday, September 23, 2019 7:46 AM

$$(x^{-2}x^{-3})^4$$

$(x^{-5})^4$   
 $x^{-20}$

$$\frac{1}{x^{20}}$$

$$\frac{y^4 x^2 \cdot 1}{y^4 x^2}$$
$$\frac{1}{x}$$

$$\frac{2x^2 y^3 z^5}{3x^2 y^3 z^5}$$
$$\frac{2x^2}{3yz^7}$$

14 total Questions, some are multiple choice.

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Write each radical using rational exponents.

$$\sqrt{u}$$
$$u^{1/2}$$

$$\sqrt[4]{y}$$
$$y^{1/4}$$

$$\sqrt[3]{p^5}$$
$$p^{5/3}$$

14 total Questions, some are multiple choice.

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Solve for x in the following equations.

$$5^{9x-4} = 5^{3x+2}$$

$$4^{5x+6} = 64$$

$$5^{9x-4} = 5^{3x+2}$$

$$9x-4 = 3x+2$$

$$6x = 6$$
$$x = 1$$

$$4^{5x+6} = 64$$

$$\downarrow 4^3$$

$$5x+6 = 3$$

$$5x = -3$$

$$x = -\frac{3}{5}$$

14 total Questions, some are multiple choice.

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Which of the following is not exponential.

x	0	1	2	3	4
y	3	7.5	18.75	46.875	117.1875

x	0	1	2	3	4
y	32	16	8	4	2

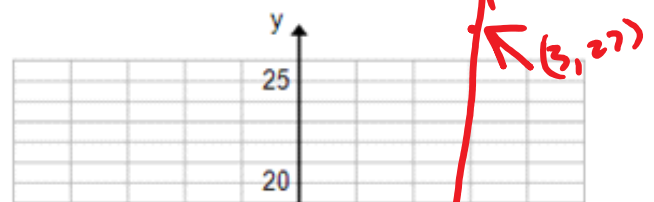
x	0	1	2	3	4
y	2	3	4	5	6

x	0	1	2	3	4
y	4	6	9	13.5	20.25

14 total Questions, some are multiple choice.

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Graph the function  $f(x) = 3^x$  in the graph below. Label the asymptote and at least 3 points.





14 total Questions, some are multiple choice.

Write the function given by the table.

x	0	1	2	3	4
y	3	7.5	18.75	46.875	117.1875

Handwritten red annotations: an arrow points to the y-value 3, another arrow points to the x-value 1, and the number 2.5 is written between them.

$$y = 3 \cdot 2.5^x$$

14 total Questions, some are multiple choice.

A marine biologist knows that there are approximately 50,000 orca whales left in the world. The population is decreasing at a rate of 3% per year. What is the exponential function that models the expected population of orcas?

$$f(x) = 50,000 (.97)^x$$

14 total Questions, some are multiple choice.

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If you invest \$5,000 into a compounding interest account that compounds monthly with an annual interest of 4%, what will you have after 8 years?

$$A = P \left( 1 + \frac{r}{n} \right)^{nt}$$

$$A = 5,000 \left( 1 + \frac{.04}{12} \right)^{12t}$$
$$A = 5,000 (1.003)^{12t} \quad t = 8$$
$$A = 5,000 (1.003)^{96}$$
$$A = 6665.91$$

14 total Questions, some are multiple choice.

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You are trying to get your math grade up. Since you started studying with friends and going to flex-time your test scores have gone up by 2.5% each time. If your initial test score was 67, write an exponential function that represents the situation and determine your test score after 5 tests.

$$g(x) = 67 (1.025)^x \quad x = \# \text{ of tests.}$$
$$g(5) = 67 (1.025)^5$$
$$g(5) = 75.8$$

14 total Questions, some are multiple choice.

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What transformations are taking place when compared to the parent function?  $f(x) = 6^{x-5} + 3$

(5) ↑ 3

14 total Questions, some are multiple choice.

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What are the characteristics of the function  $f(x) = \frac{1}{4}x - 1$ ?  
Increasing or Decreasing (Shape):



Domain:  $\mathbb{R}$

Range:  $y > -1$

Asymptote:  $y = -1$

14 total Questions, some are multiple choice.

