

Today's Plan:

Learning Target (standard): I will review exponential and logarithmic functions.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, and complete practice problems over review concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of review concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, and actively engage in practice problems.

Exponential & Logarithmic Functions Practice #1-20

QUIZ Tuesday!

1) $D: \mathbb{R}; R: \{y \mid y > -2\}; HA: y = -2$

2) $D: \mathbb{R}; R: \{y \mid y > -1\}; HA: y = -1$

3) $D: \mathbb{R}; R: \{y \mid y > 2\}; HA: y = 2$

4) $D: \{x \mid x > -3\}; R: \mathbb{R}; VA: x = -3$

5) $D: \{x \mid x > 1\}; R: \mathbb{R}; VA: x = 1$

6) $D: \{x \mid x > -4\}; R: \mathbb{R}; VA: x = -4$

7) $6^{11} = x$

8) $10^y = x$

9) $x^y = 176$

10) $y^x = 137$

11) $\log_y x = -\frac{4}{9}$

12) $\log_{\frac{11}{9}} x = y$

13) $\log_y 26 = x$

14) $\log_{18} k = -12$

15) -3

16) 1

17) 0

18) -5

19) 0.729

20) 3.664

Graph. State the domain and range and asymptote.

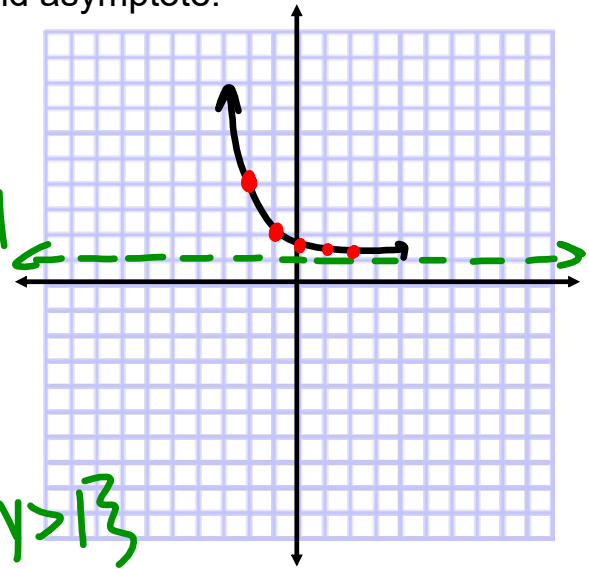
$$f(x) = \left(\frac{1}{3}\right)^{x+1} + 1$$

x	y
-2	4
-1	2
0	1.3333
1	1.1111
2	1.037

HA: $y = 1$

D: \mathbb{R}

R: $\{y \mid y > 1\}$



Graph. State the domain and range and asymptote.

$$f(x) = \ln(x - 2)$$

x	y
2.135	-2
2.368	-1
3	0
4.718	1
9.389	2

$y = \log_e(x-2)$

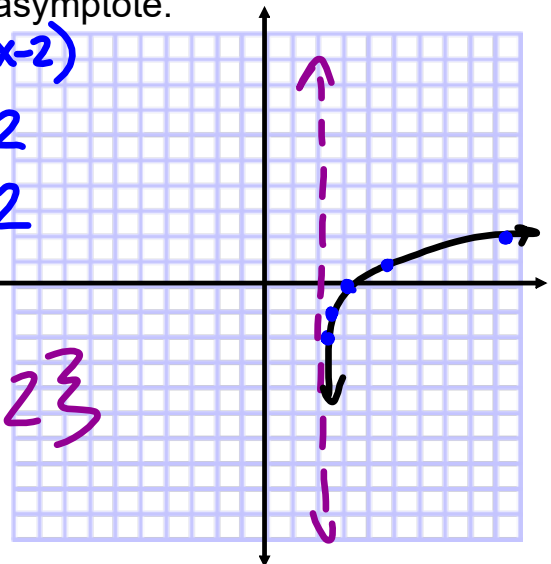
$e^y = x - 2$

$x = e^y + 2$

VA: $x = 2$

D: $\{x \mid x > 2\}$

R: \mathbb{R}



Change to logarithmic form:

$$5^{-2} = \frac{1}{25}$$

$$\log_5\left(\frac{1}{25}\right) = -2$$

$$\begin{array}{l} y = \log_a x \\ a^y = x \end{array}$$

$$e^{-1} = \frac{1}{e}$$

$$\log_e\left(\frac{1}{e}\right) = -1$$

$$\ln\left(\frac{1}{e}\right) = -1$$

Change to exponential form:

$$\log_6 216 = 3$$

$$6^3 = 216$$

$$\log 1000 = 3$$

$$10^3 = 1000$$

Find the exact value without a calculator.

$$\log_{\frac{1}{3}}\left(\frac{1}{81}\right) = x$$

$$\left(\frac{1}{3}\right)^x = \frac{1}{81}$$

$$x = 4$$

$$\ln \sqrt[4]{e^3} = x$$

$$e^x = \sqrt[4]{e^3}$$

$$e^x = e^{\frac{3}{4}}$$

$$x = \frac{3}{4}$$

Solve.

$$\log x = \frac{1}{100}$$

$$10^{\frac{1}{100}} = x$$

$$x = 1.023$$

$$\log_3 x = -4$$

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

$$x = \frac{1}{3^4}$$

$$x = \frac{1}{81}$$

Graph. State the domain and range and asymptote.

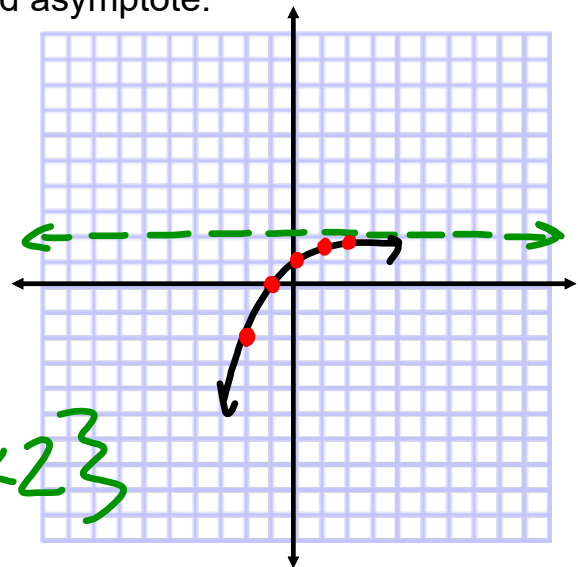
$$f(x) = -\left(\frac{1}{2}\right)^x + 2$$

x	y
-2	-2
-1	0
0	1
1	1.5
2	1.75

HA: $y=2$

D: \mathbb{R}

R: $\{y \mid y < 2\}$



Assignment:

Exponential & Logarithmic
Functions Practice 2

#1-12

QUIZ Tomorrow!