

## Today's Plan:

**Learning Target (standard):** I will graph exponential functions using t-charts.

**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, take notes over new material and complete practice problems over new concepts.

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

**Assessment:** Board work, homework check and homework assignment

**Differentiation:** Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

p.538 #2-38 even

$$2) f(3) = 27$$

$$4) f(-1) = \frac{1}{3}$$

$$6) f(1) = 3$$

$$8) f(1) = 4$$

$$10) f(-4) = \frac{1}{8}$$

$$12) f(0) = 2$$

$$14) f(1) = \frac{1}{4}$$

$$16) f(-1) = 4$$

$$18) f\left(-\frac{1}{2}\right) = 2$$

$$20) f(3) = \frac{1}{9}$$

$$22) f(-2) = 27$$

$$24) f(1) = 1$$

$$26) f(0) = 1$$

$$28) f(3) = 512$$

$$30) f(-2) = 16$$

$$32) f(2) = 6$$

$$34) f(-2) = 2$$

$$36) f(1) = e^3 \approx 20.0855$$

$$38) f(-1) = e^2 \approx 7.3891$$

Evaluate the function.

$$f(x) = -e^{x+2}$$

$$f(0) = -e^{0+2}$$

$$f(0) = -e^2$$

$$f(0) = -7.389$$

$$f(0) =$$

$$f(-1) =$$

$$f(-1) = -e^{-1+2}$$

$$f(-1) = -e^1$$

$$f(-1) = -2.718$$

Evaluate the function.

$$f(x) = \left(\frac{3}{4}\right)^{x-1}$$

$$f(0) = \left(\frac{3}{4}\right)^{0-1}$$

$$f(0) = \left(\frac{3}{4}\right)^{-1}$$

$$f(0) = \frac{4}{3}$$

$$f(0) =$$

$$f(3) =$$

$$f(3) = \left(\frac{3}{4}\right)^{3-1}$$

$$f(3) = \left(\frac{3}{4}\right)^2$$

$$f(3) = \frac{9}{16}$$

Evaluate the function.

$$f(x) = \pi^{2x+3}$$

$$f(1) = \pi^{2(1)+3}$$

$$f(1) = \pi^5$$

$$f(1) = 306.020$$

$$f(1) =$$

$$f(-2) =$$

$$f(-2) = \pi^{2(-2)+3}$$

$$f(-2) = \pi^{-4+3}$$

$$f(-2) = \pi^{-1}$$

$$f(-2) = 0.318$$

Graph. State the domain and range and asymptote.

$$f(x) = e^x$$

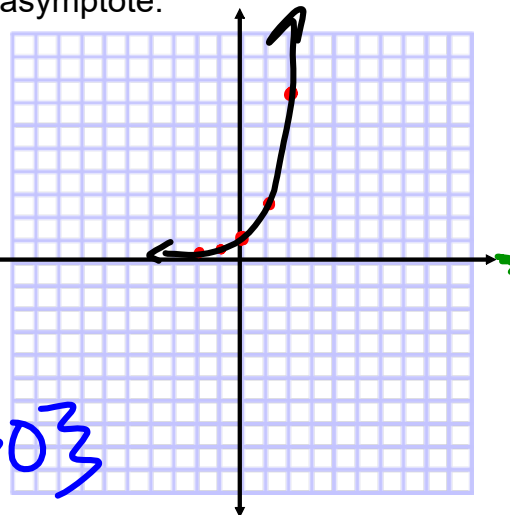
$$f(-2) = e^{-2}$$

x	y
-2	.135
-1	.367
0	1
1	2.718
2	7.389

$$\text{HA: } y = 0$$

$$\text{D: } \mathbb{R}$$

$$\text{R: } \{y \mid y > 0\}$$



Asymptote - an imaginary line that a graph gets close to, but never touches or crosses (graph as dotted)

Graph. State the domain and range and asymptote.

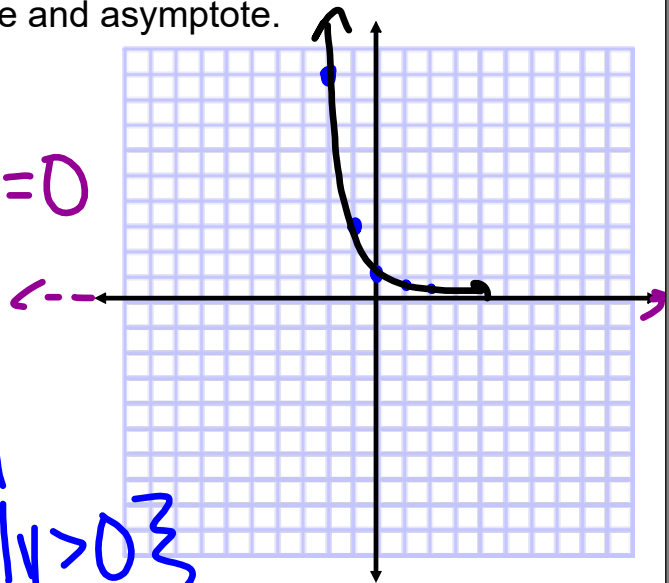
$$f(x) = \left(\frac{1}{3}\right)^x$$

x	y
-2	9
-1	3
0	1
1	0.333
2	0.111

HA:  $y=0$

D:  $\mathbb{R}$

R:  $\{y \mid y > 0\}$



Graph. State the domain and range and asymptote.

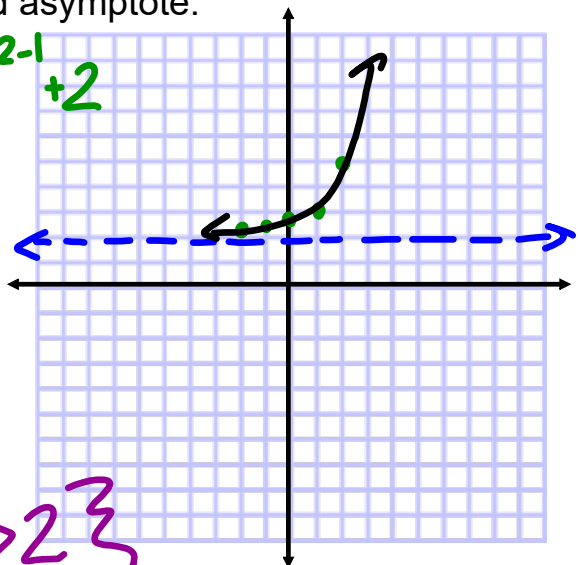
$$f(x) = 3^{x-1} + 2 \quad f(-2) = 3^{-2-1} + 2$$

x	y
-2	2.037
-1	2.111
0	2.333
1	3
2	5

HA:  $y=2$

D:  $\mathbb{R}$

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



# Assignment:

p.539 #40-48 even

Graph each exponential function using a t-chart. Use the examples from class to guide you. Include the domain, range and horizontal asymptotes. Show ALL work!