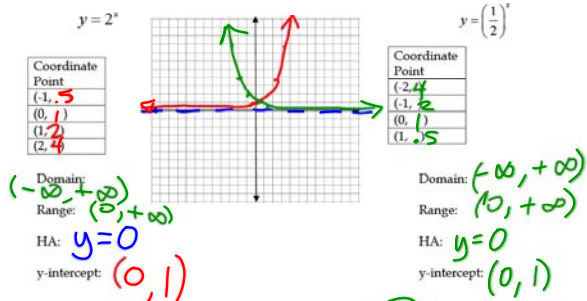


p. 24-25 Graph Exponential Functions Sec. 7.2

p. 24

Target 2 I can graph exponential decay functions.

Let's look at the relationship between the functions $y = 2^x$ and $y = \left(\frac{1}{2}\right)^x$ by looking at their graphs.Standard Form of Exponential Decay Function: Remember: $0 < b < 1$

$$y = ab^{x-h} + k$$

$$y = k \text{ (HA)}$$

a stretch
 of a , flip

h left/right
 + -

k up/down
 + -

Tell whether the function represents exponential growth or exponential decay:

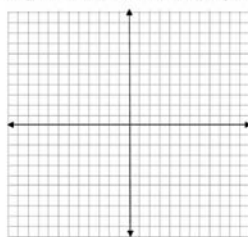
- a. $f(x) = 4 \cdot 2^{-x}$ decay
 b. $g(x) = 10 \cdot 3^x$ growth
 c. $h(x) = 5 \cdot \left(\frac{1}{2}\right)^x - 5$ growth
 d. $j(x) = 5 \cdot \left(\frac{1}{3}\right)^x + 7$ decay

What questions do you have?

Chapter 7 Target 1 Practice

Name: _____

Graph the function on the coordinate plane and fill in all the information.

1. Graph: $f(x) = -2^x + 4$

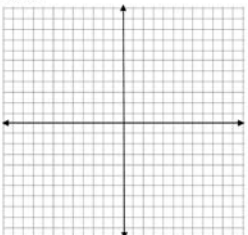
Transformations:

Horizontal asymptote:

y-intercept:

Domain:

Range:

3. Graph: $f(x) = 3^{x+1} + 3$

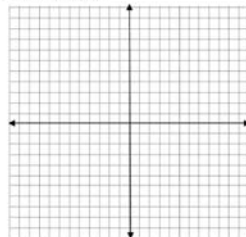
Transformations:

Horizontal asymptote:

y-intercept:

Domain:

Range:

2. Graph: $f(x) = 3 \cdot 2^x + 1$

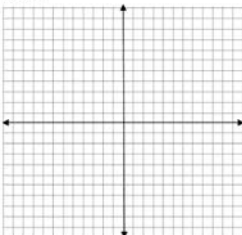
Transformations:

Horizontal asymptote:

y-intercept:

Domain:

Range:

4. Graph: $f(x) = -2 \cdot 3^{x-1} - 2$

Transformations:

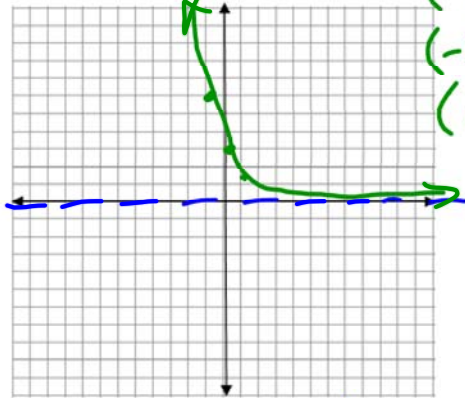
Horizontal asymptote:

y-intercept:

Domain:

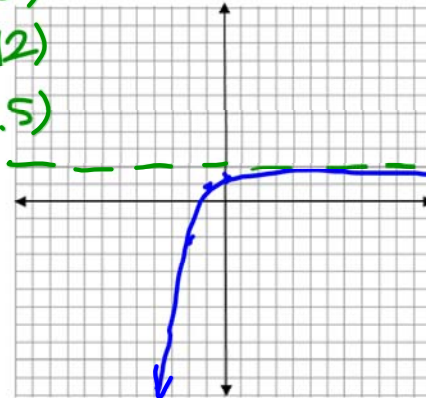
Range:

Chapter 7 Target 2 Notes



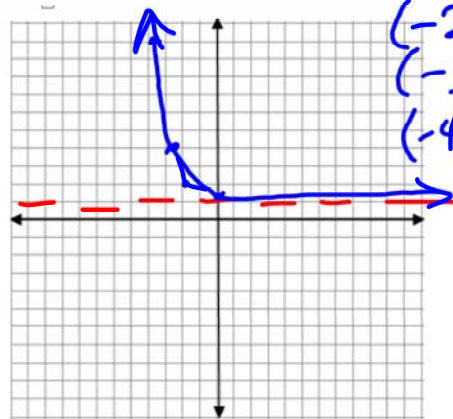
1. Graph: $f(x) = 3\left(\frac{1}{2}\right)^x$ decay
 Transformations: stretch 3
 Horizontal asymptote: $y=0$
 y-intercept: $(0, 3)$
 Domain: $(-\infty, +\infty)$
 Range: $(0, +\infty)$

$(-1, 6)$
 $(-2, 12)$
 $(1, 1.5)$



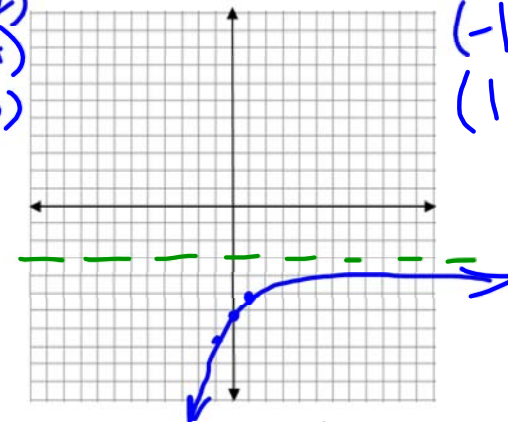
3. Graph: $f(x) = -\left(\frac{1}{4}\right)^{x+1} + 2$
 Transformations: flip; up 2; left 1
 Horizontal asymptote: $y=2$
 y-intercept: $(0, 1.75)$
 Domain: $(-\infty, +\infty)$
 Range: $(-\infty, 2)$

25
 $(-1, 1)$
 $(-2, 2)$



2. Graph: $f(x) = \left(\frac{1}{3}\right)^{x+2} + 1$
 Transformations: left 2; up 1
 Horizontal asymptote: $y=1$
 y-intercept: $(0, 1.1)$
 Domain: $(-\infty, +\infty)$
 Range: $(1, +\infty)$

$(-2, 2)$
 $(-3, 4)$
 $(-4, 10)$



4. Graph: $f(x) = -2\left(\frac{2}{3}\right)^{x-1} - 3$ stretch 2;
 Transformations: flip; right 1; down 3
 Horizontal asymptote: $y=-3$
 y-intercept: $(0, -6)$
 Domain: $(-\infty, +\infty)$
 Range: $(-3, -\infty)$

$(-1, -7.5)$
 $(1, -5)$