

Name: Key

1.) Graph:  $y = 5^x + 2$   $(0,1) \uparrow 2$   
 $(0,3)$

Asymptote:  $y = 2$

Domain:  $(-\infty, \infty)$

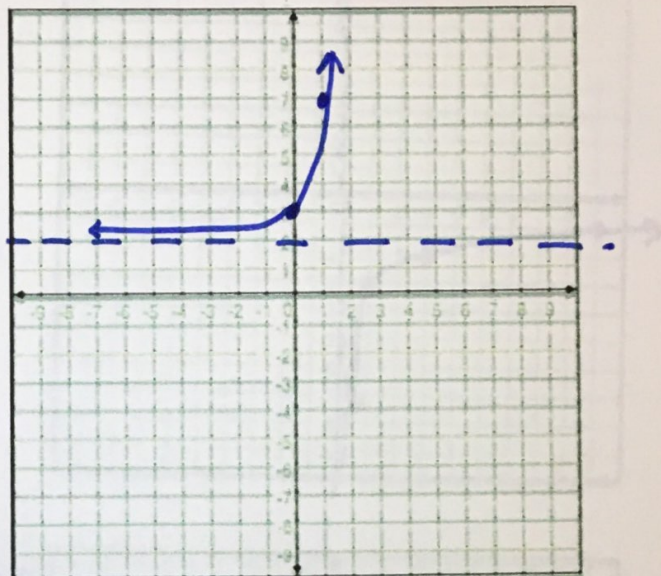
Range:  $(2, \infty)$

Increasing:  $(-\infty, \infty)$

Decreasing: never

Inverse:  $y^{-1} = \log_5(x-2)$

$$x = 5^y + 2$$
$$x - 2 = 5^y$$
$$\log_5(x-2) = y$$



2.) Graph:  $y = \log_4(x+3)$   $(1,0)$  left 3  
 $(-2,0)$

Asymptote:  $x = -3$

Domain:  $(-3, \infty)$

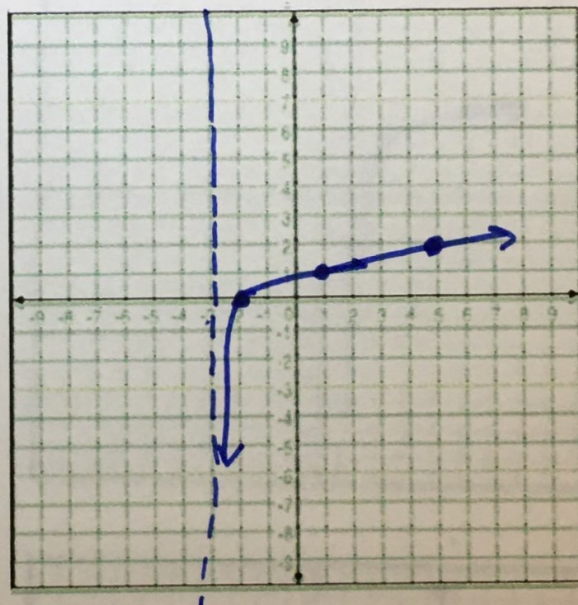
Range:  $(-\infty, \infty)$

Increasing:  $(-3, \infty)$

Decreasing: never

Inverse:  $y^{-1} = 4^x - 3$

$$x = \log_4(y+3)$$
$$4^x = y+3$$
$$4^x - 3 = y^{-1}$$



3.) Graph:  $y = 2^{x-4} + 0$   $(0,1)$  right 4  
 $(4,1)$

Asymptote:  $y = 0$

Domain:  $(-\infty, \infty)$

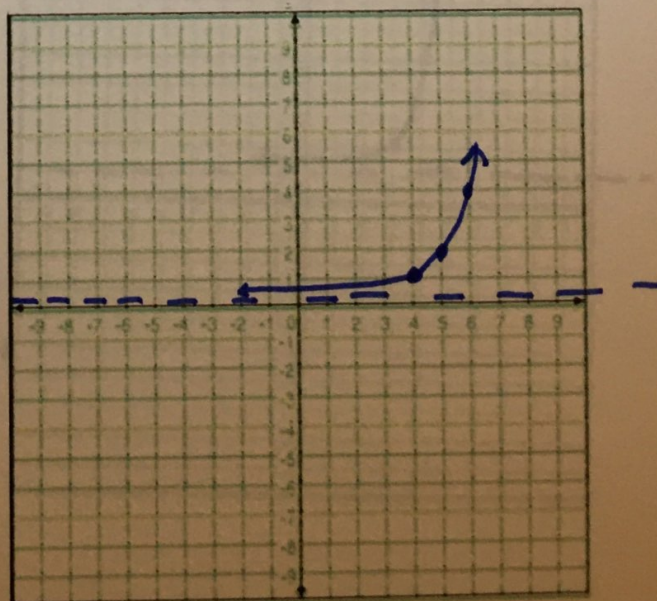
Range:  $(0, \infty)$

Increasing:  $(-\infty, \infty)$

Decreasing: never

Inverse:  $y^{-1} = 2^x + 4$

$$x = 2^{y-4}$$
$$2^x = y-4$$
$$2^x + 4 = y^{-1}$$





4.) Graph:  $y = \log_3(x) - 3$  (1,0) down 3  
(1,-3)

Asymptote:  $x=0$

Domain:  $(0, \infty)$

Range:  $(-\infty, \infty)$

Increasing:  $(0, \infty)$

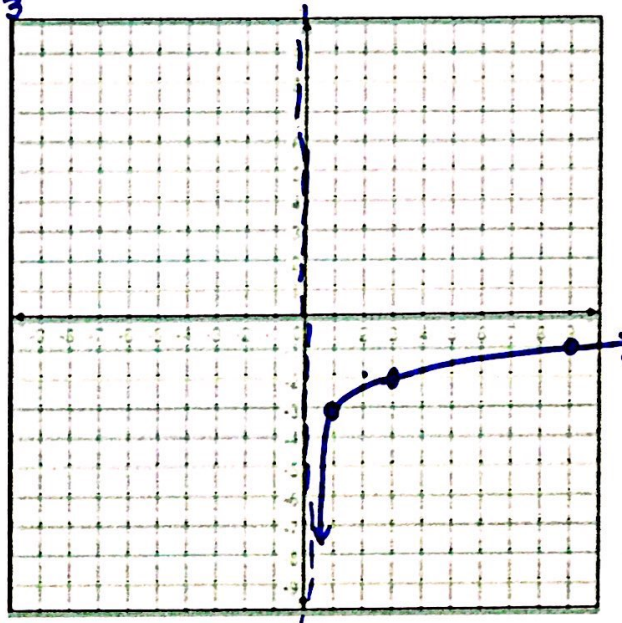
Decreasing: Never

Inverse:  $y^{-1} = 3^{x+3}$

$$x = \log_3(y) - 3$$

$$x + 3 = \log_3 y$$

$$3^{x+3} = y^{-1}$$



5.) Graph:  $y = \log_4(x-1) + 2$  (1,0) right 1 up 2  
(2,2)

Asymptote:  $x=1$

Domain:  $(1, \infty)$

Range:  $(-\infty, \infty)$

Increasing:  $(1, \infty)$

Decreasing: Never

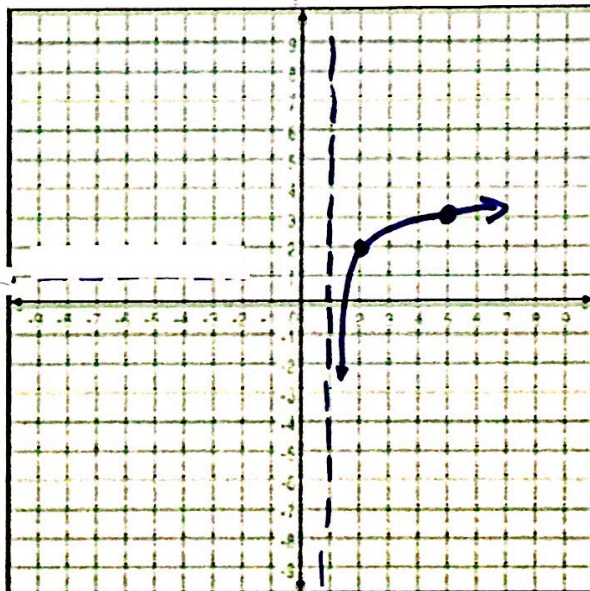
Inverse: \_\_\_\_\_

$$x = \log_4(y-1) + 2$$

$$x - 2 = \log_4(y-1)$$

$$4^{x-2} = y-1$$

$$4^{x-2} + 1 = y^{-1}$$



6.) Graph:  $y = 4^{x-3} + 1$  (0,1) right 3 up 1  
(3,2)

Asymptote:  $y=1$

Domain:  $(-\infty, \infty)$

Range:  $(1, \infty)$

Increasing:  $(-\infty, \infty)$

Decreasing: Never

Inverse: \_\_\_\_\_

$$x = 4^{y-3} + 1$$

$$x - 1 = 4^{y-3}$$

$$\log_4(x-1) = y-3$$

$$\log_4(x-1) + 3 = y^{-1}$$

