Graph $y=2^x$

x | y

HA $y=0$

0 | 1
1 | 2
2 | 4
3 | 8

Identify 4 points and then graph the inverse.

Logs are the inverse of exponentials

(Switch x & y)　x | y

$x=0$
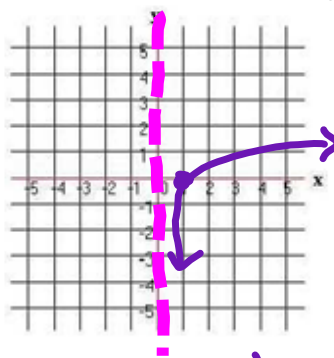
1 | -2
2 | -1
4 | 0
8 | 1
　| 2
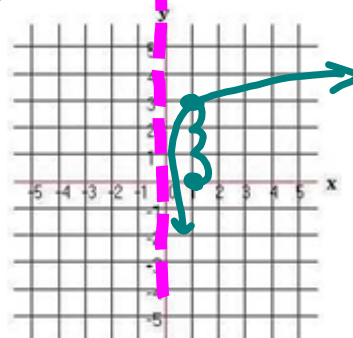　| 3

Graph:

$$f(x) = \log_2 x$$

VA: x=0

Domain: $(0, \infty)$

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

Graph: $f(x) = 3 + \log_2 x$

$(\log_2 x) + 3$ up 3

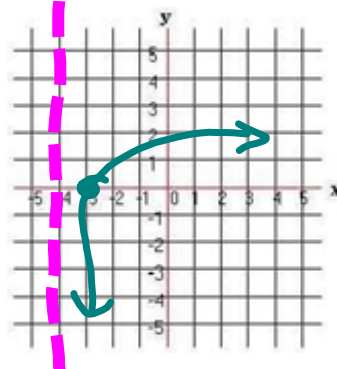Domain:
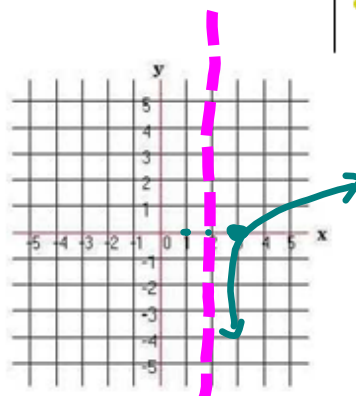
Range:

Graph: $f(x) = \log_2(x+4)$

Left + 4
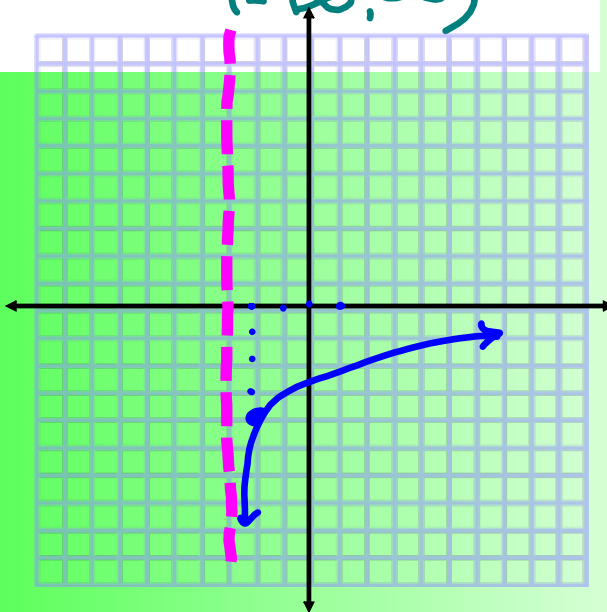
VA $x = -4$

Domain:

Range:

Graph: $f(x) = \log_2(x-2)$
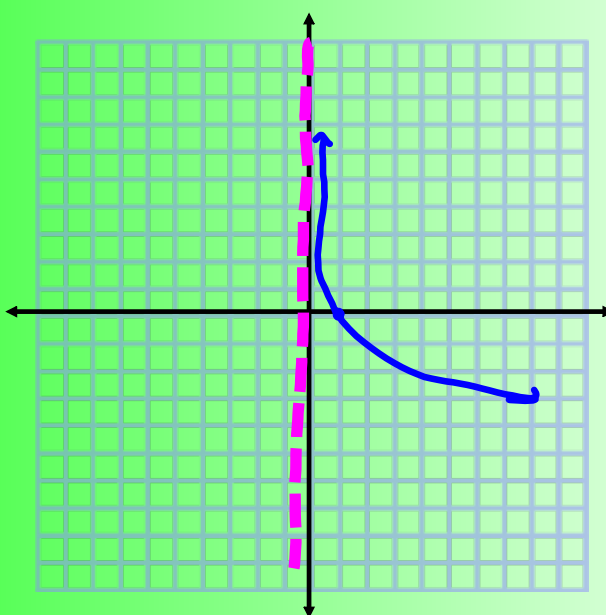
Domain: $(2, \infty)$
Range: $(-\infty, \infty)$

$\log_4(x+3) - 4$

left 3
down 4

$-\log_3 X$

Find the value of x.

$$x = \log_4 64$$

$\log_4 \boxed{64} = X$

convert to
exponential

$4^x = 64$

$4^x = 4^3$

$X = 3$

find like
bases + solve

Find the value of x.

$$x = \log_2 16$$

$\log_2 16 = x$

$2^x = 16$

$2^x = 2^4$

$x = 4$

Find the value of x.

$$x = \log_{125} 5$$

$\log_{125} 5 = x$

$125^x = 5$

$(5^3)^x = 5$

$5^{3x} = 5^1$

$3x = 1$

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

Find the value of x.

$$5 = \log_x 32$$

$$\log_x 32 = 5$$

$$x^5 = 32$$

$$x^5 = 2^5$$

$$x = 2$$

Find the value of x.

$$4 = \log_3 x$$

$$3^4 = x$$

$$81 = x$$