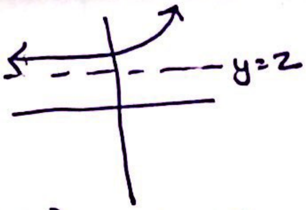
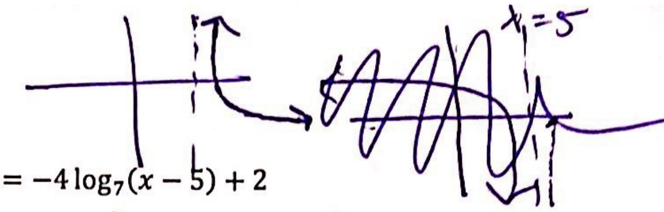
Warm Up





1) $f(x) = 3(4)^{(x-5)} + 2$

D: $(-\infty, +\infty)$ R: $(2, +\infty)$ A: $y=2$

As $x \to -\infty$, $f(x) \to$ 2

As x approaches $-\infty$, y approaches ____

$f^{-1}(x) = \log_4\left(\frac{1}{3}(x-2)\right)+5$

D: $(2, +\infty)$ R: $(-\infty, +\infty)$ A: $x=2$

As $x \to -\infty$, $f^{-1}(x) \to$ ____

$x = 3(4)^{(y-5)}+2$

$x-2 = 3(4)^{(y-5)}$

$\frac{1}{3}(x-2) = 4^{(y-5)}$

$\log_4\left(\frac{1}{3}x - \frac{2}{3}\right) = y-5$

$\log_4\left(\frac{1}{3}x - \frac{2}{3}\right)+5$

2) $g(x) = -4\log_7(x-5) + 2$

D: $(5, +\infty)$ R: $(-\infty, +\infty)$ A: $x=5$

As $x \to -\infty$, $g(x) \to$ ____

$g^{-1}(x) = 7^{-\frac{1}{4}(x-2)} + 5$

D: $(-\infty, +\infty)$ R: $(5, +\infty)$ A: $y=5$

As $x \to -\infty$, $g^{-1}(x) \to$ 5

$x = -4\log_7(y-5)+2$

$x-2 = -4\log_7(y-5)$

$-\frac{1}{4}(x-2) = \log_7(y-5)$

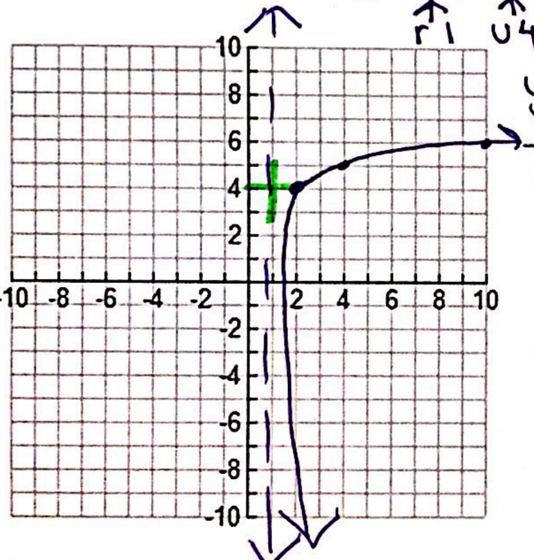
$7^{-\frac{1}{4}(x-2)} = y-5$

$\log_4(2(x-3))$

Graph each of the following functions.

3) Graph the function: $f(x) = \log_3(x-1) + 4$

$y = \log_3 x$ r 1 u 4



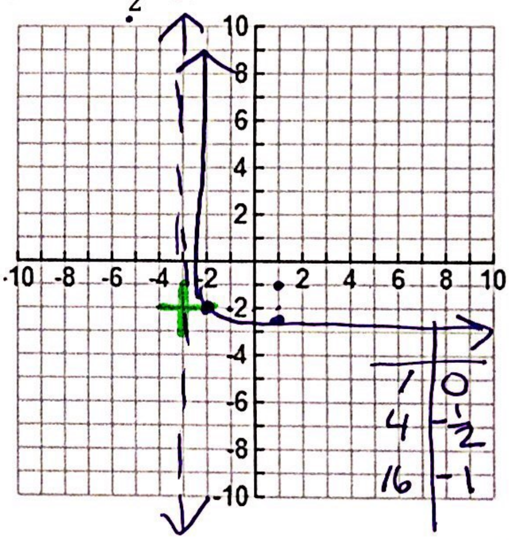
$y = 3^x$

x	y
0	1
1	3
2	9

x	y
1	0
3	1
9	2

4) $g(x) = -\frac{1}{2}\log_4(x+3) - 2$

L3 D2



1	0
4	$-\frac{1}{2}$
16	-1

$y = 4^x$

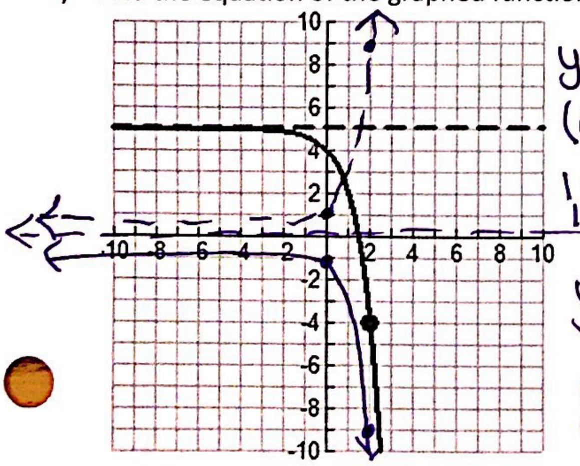
x	y
0	1
1	4
2	16

$-\frac{1}{2}$

x	y
1	0
4	1
16	2

$-\frac{1}{2}$

4) Find the equation of the graphed function



$y = ab^x + c$

$(0,1)(2,9)$

$1 = ab^0$ $9 = 1b^2$

$1 = a$ $3 = b$

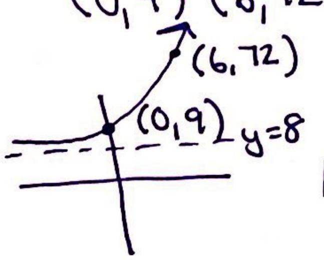
$y = 1(3)^x$

$y = -3^x + 5$

5) Find the equation of an exponential function with the following properties:

$f(0) = 9$ $f(6) = 72$ as $x \to -\infty, f(x) \to 8$

$(0,9)\ (6,72)$



$y = ab^x + c$

$9 = ab^0 + 8$

$1 = a$

$72 = (1)b^6 + 8$

$64 = b^6$

$2 = b$

$y = 2^x + 8$