**C.**



(-5,4)

$$y = \log_b(x-h) + k$$

mult "wider"

up down

Left or Right

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

---

3 left

c.    $y = \log_4(x+3) + 2$   2 up

1. Translate origin
2. Draw Asymptote
3. Plot "1,0" translated
4. Use Base to Plot Points

b.  $y = \log_3 x - 4$



$y = \log_3 (x-4)$
right 4

$y = \log_3 (x) - 4$
down 4

1. $6^x = 95$    A. 1.98   B. 2.54

C. 4.55    D. 4.95

$x = \log_6 95$  $= ?$
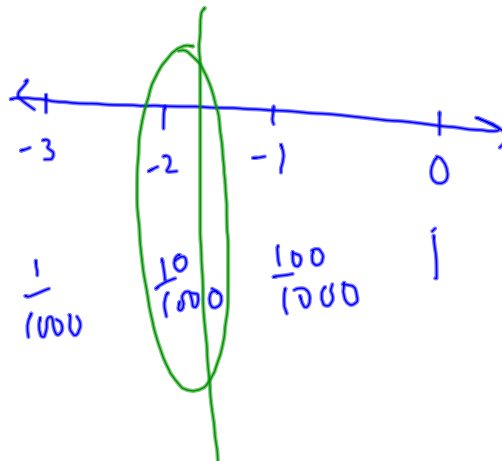
2. $8^a = -10$          A. 0.08    B. -0.08

                C. -1.08    (D. No solution)

$a = \log_8 -10$

---

3. $10^w = 0.011$        A. -2.11    (B. -1.95)

                C. -0.05    D. 0.05

$10^w = \dfrac{11}{1000}$

$w = \log \dfrac{11}{1000}$

$\dfrac{1}{1000}$      $\dfrac{10}{1000}$    $\dfrac{100}{1000}$    $1$

4. $4^{3n-2} = 20$    A. 1.4    B. 1.9

C. 2.2    D. 7.2

$3n-2 = \log_4 20$

$3n-2 = 2.\text{Small}$

$\dfrac{3n = 4.\text{Small}}{3}$

$n = \dfrac{4.\text{Small}}{3}$

5. $7^{b-6} + 4 = 75$    A. 2.2    B. 8.2

C. 8.8    D. 10.2

$7^{b-6} = 71$

$b-6 = \log_7 71$

$b-6 = 2.\_\_$

$8.\_\_$

6. $8^{4-n}+1=77$    A. -2.1      B. -1.9

           (C. 1.9)    D. 2.1

$$8^{4-n} = 76$$

$$4-n = \log_8 76$$

$$4-n = 2.\underline{\phantom{--}}$$

$$-n = -1.\text{ Big}$$
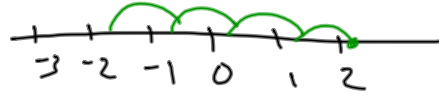


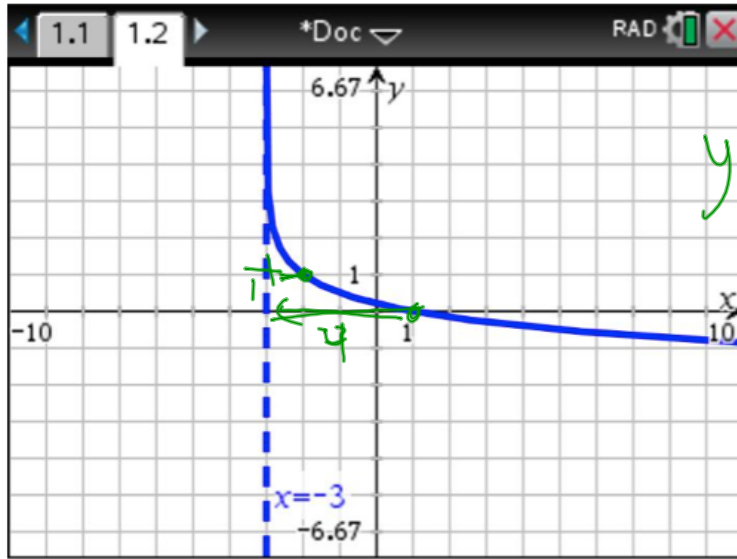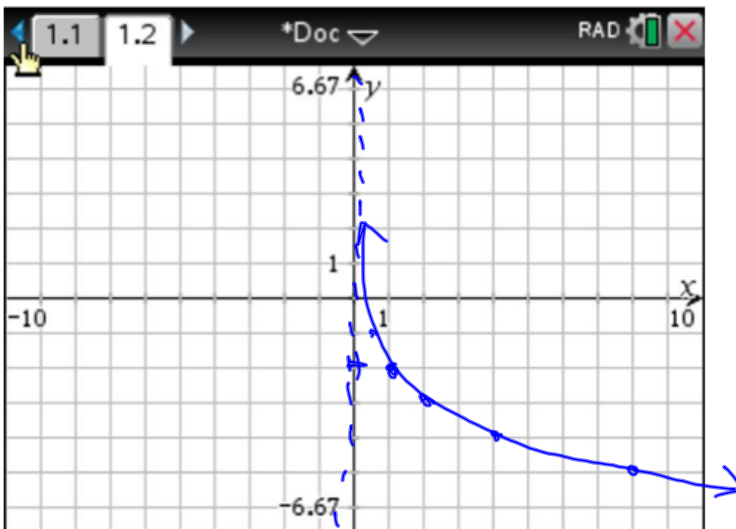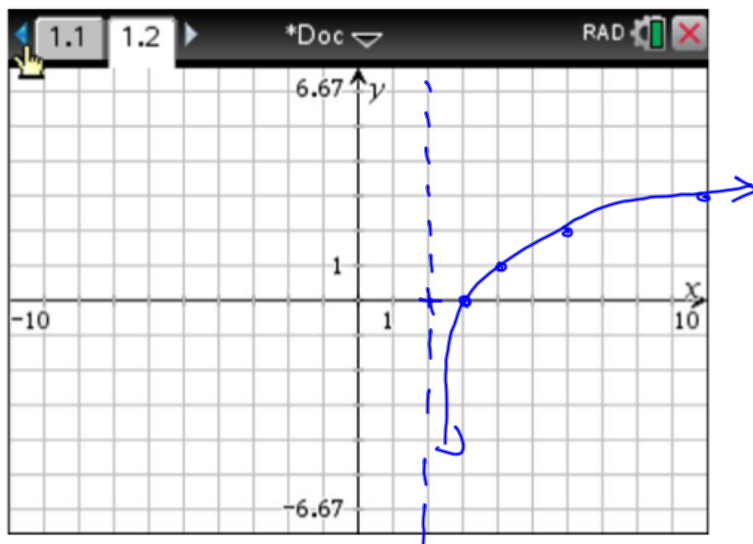a.
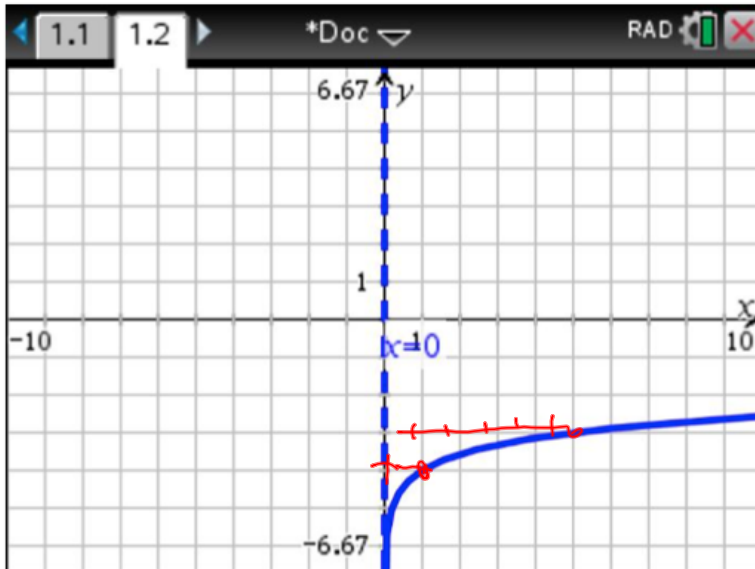


$$y = \log_5(x) - 4$$

**b.**



$$y = \log_{\frac{1}{4}}(x+3) + 1$$

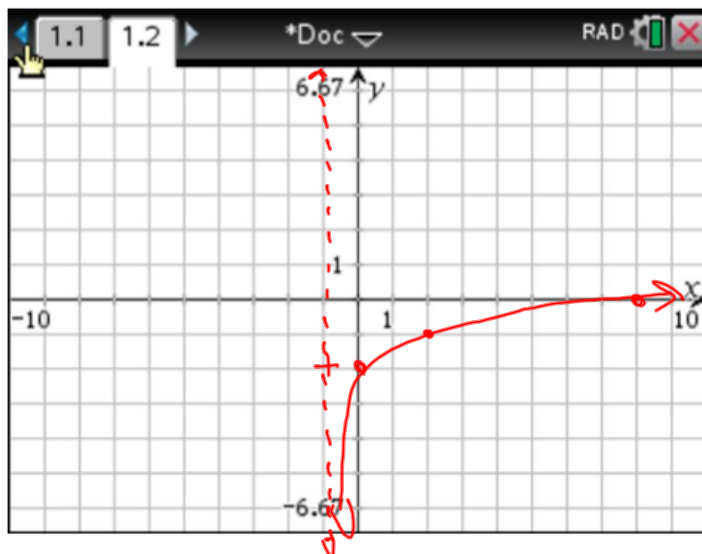**a.** $f(x) = \log_{\frac{1}{2}} x - 2$

b.   $g(x) = \log_2(x-2)$



c.   $h(x) = \log_3(x+1) - 2$

d.  $k(x)=\log_{\frac{1}{4}}(x+6)+3$