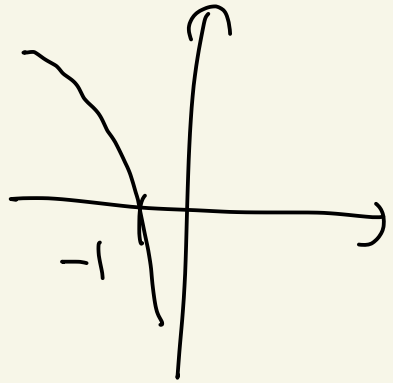
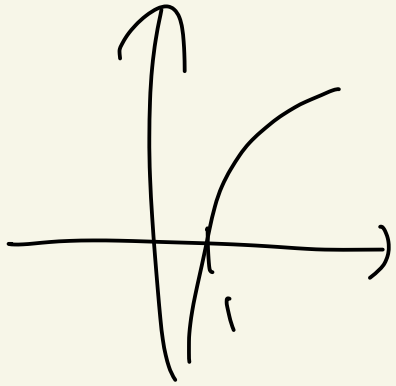
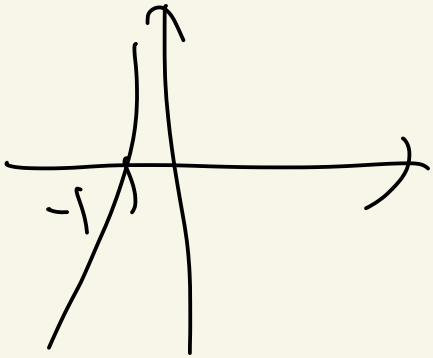
$y = \log_2(-x)$

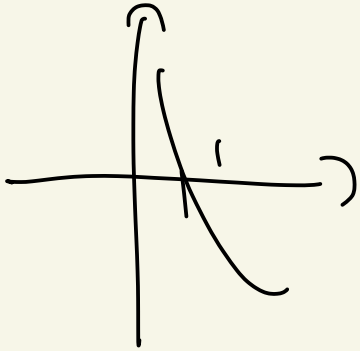



$y = \log_2 x$

$y = -\log_2(-x)$



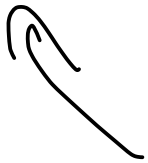

$y = -\log_2 x$

$$y = \pm \log_a x$$

$$\left(\pm,\ a > 1\right)$$

**문제 1.** 다음 로그함수 그래프의 방향을 결정하시오.

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

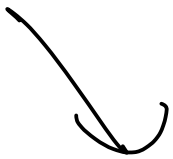


(위, 아래) (왼쪽, 오른쪽)

(2) $y = \log_5 x$

(위, 아래) (왼쪽, 오른쪽)

(3) $y = -\log_2 x$



(위, 아래) (왼쪽, 오른쪽)

(4) $y = -\log_{\frac{1}{2}} x$ $= -\log_{2^{-1}} x = \frac{-1}{-1}\log_2 x$ (위 / 아래) (왼쪽 오른쪽)

$= \log_2 x$ (위 / 아래) (왼쪽 오른쪽)

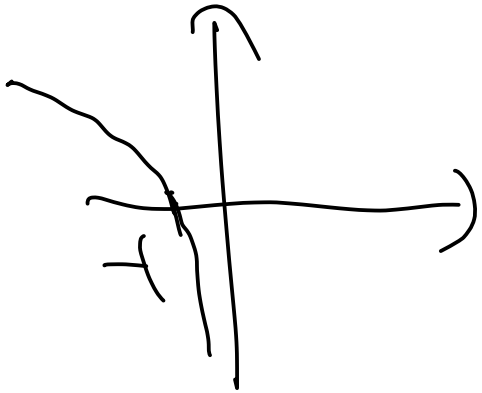
(5) $-y = \log_2(-x)$

$\left(\frac{1}{2}\right) = 2^{-1}$

$y = -\log_2(-x)$

[2~6] 다음 로그함수의 $x$절편을 찾아 그래프를 그리고, 점근선의 방정식을 시오.

**문제 2.** $y = \log_2(-x)$



$x=0$

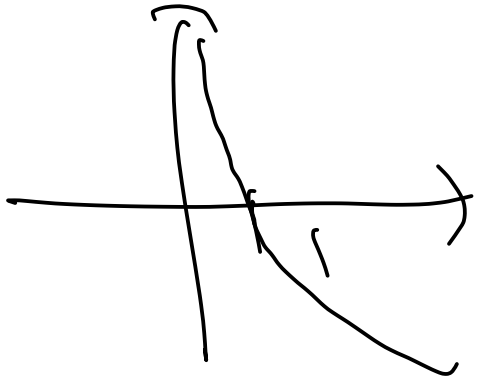
$0 = \log_2(-x)$

$2^0 = -x$

$1 = -x$

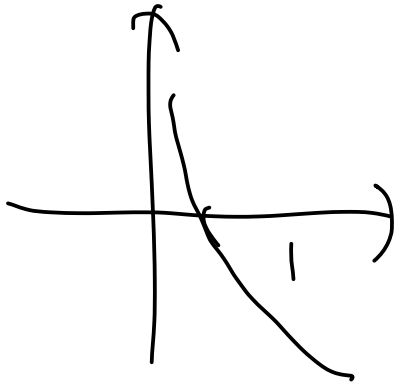
$x = -1$

**문제 3.** $y = -\log_4 x$



$x=0$

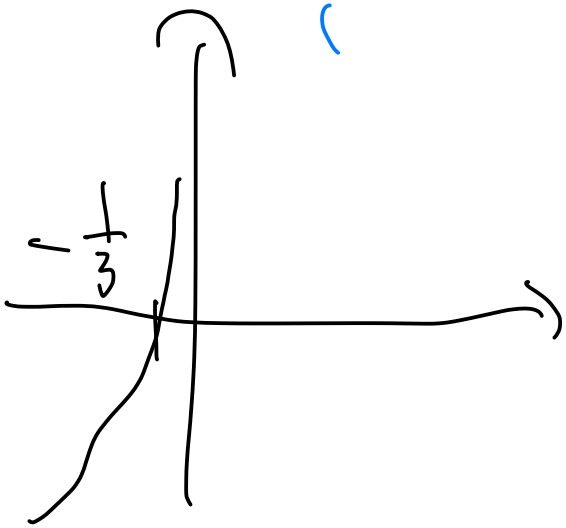
**문제 4.** $y = \log_{\frac{1}{5}} x$



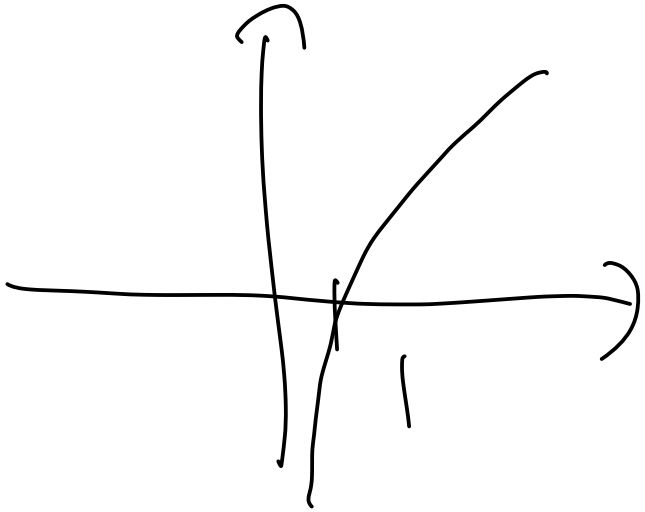

**문제 5.** $y = -\log_3(-3x)$

$-3x = 1$

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

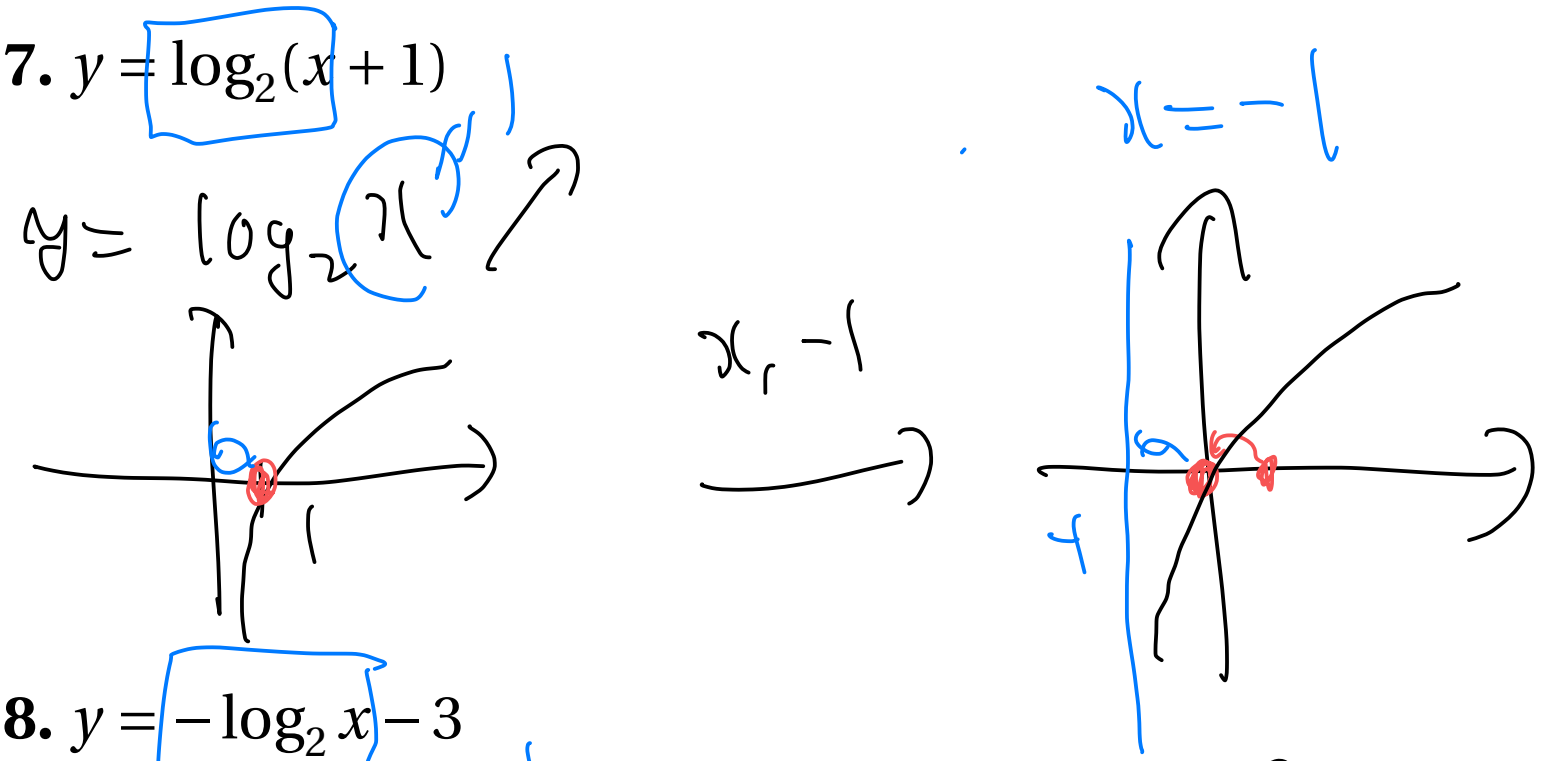


**문제 6.** $y = 5\log_2 x$

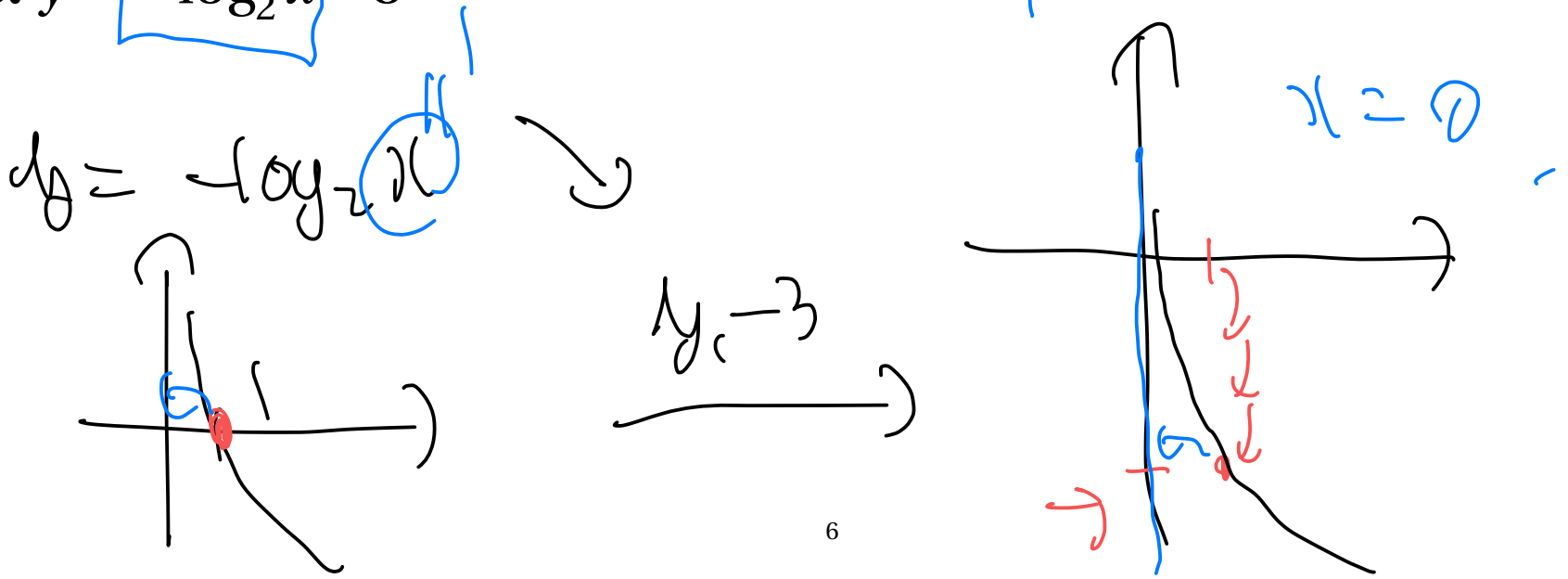


[7~10] 다음 로그함수의 그래프를 그리고, 점근선의 방정식을 쓰시오.

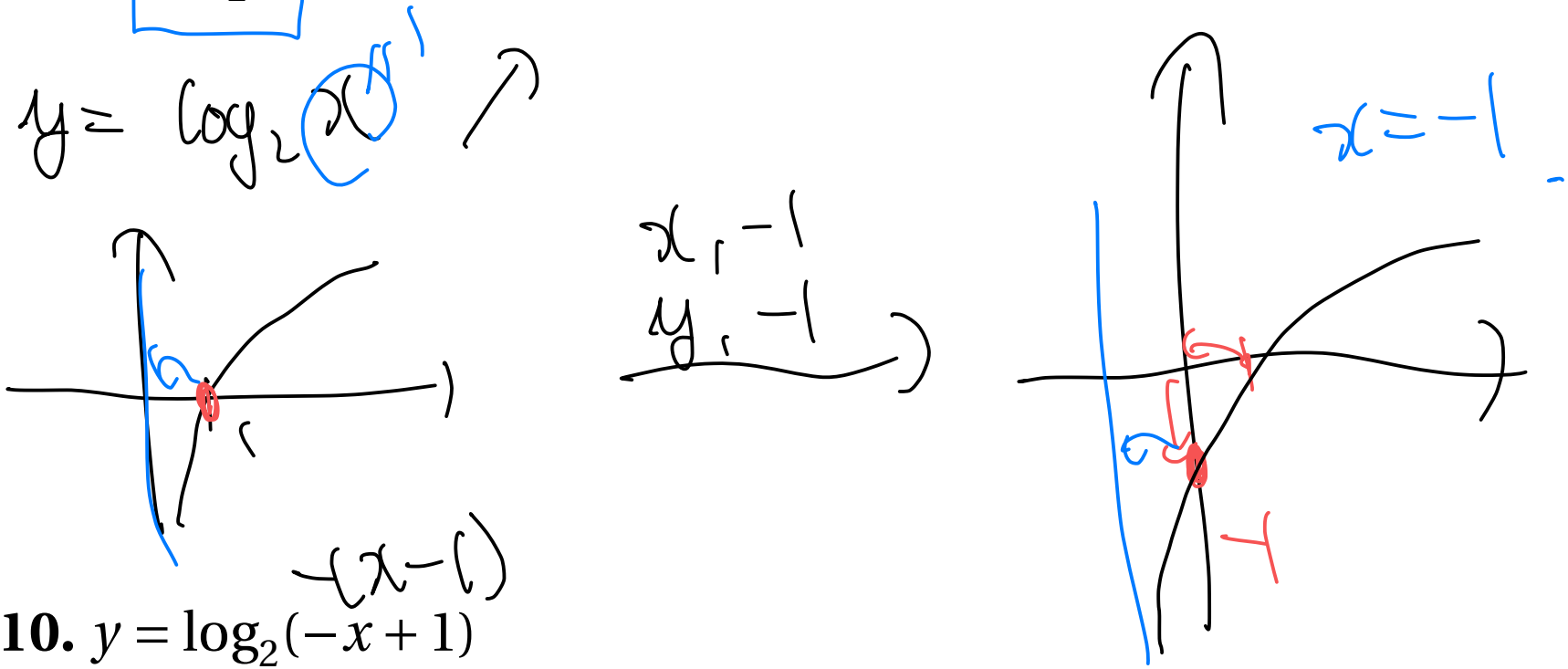
**문제 7.** $y = \log_2(x+1)$



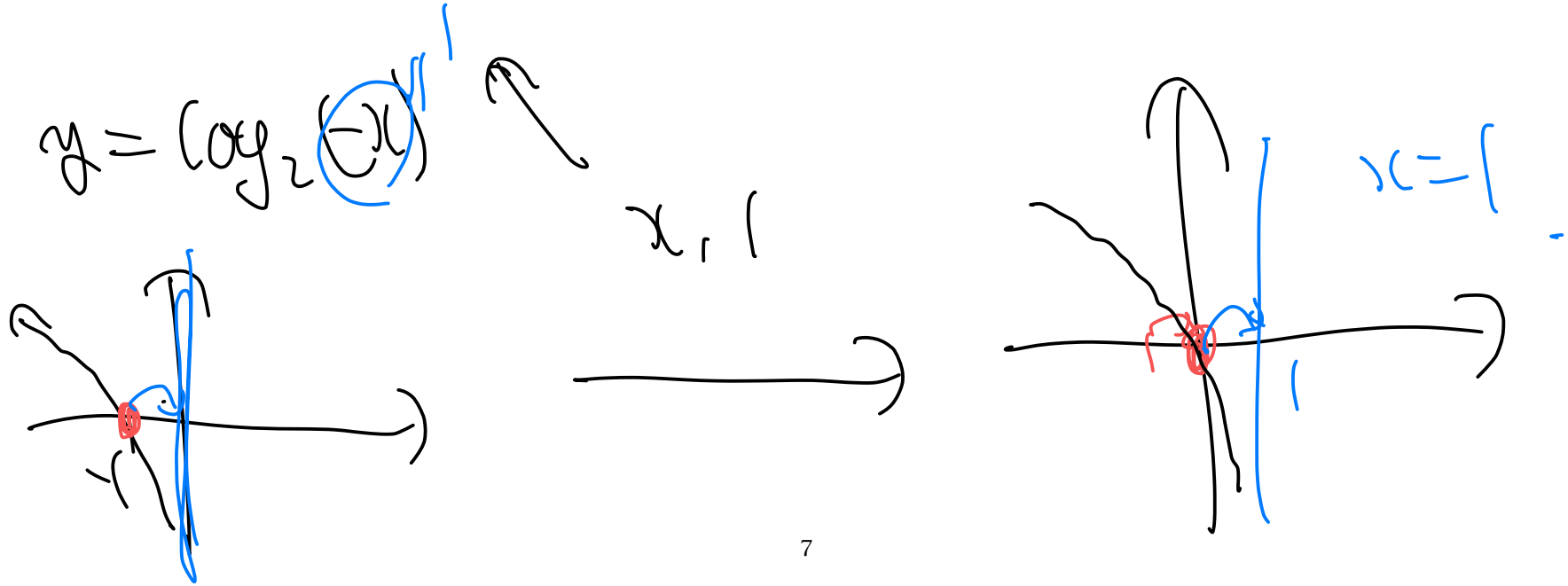

**문제 8.** $y = -\log_2 x - 3$



**문제 9.** $y = \log_2(x+1) - 1$

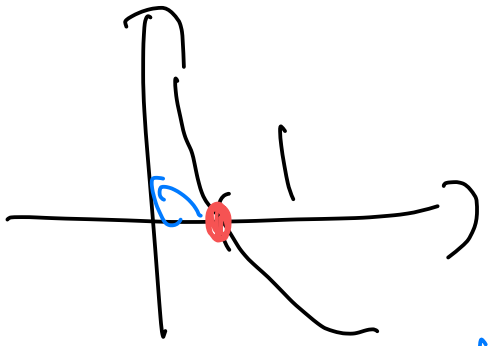



**문제 10.** $y = \log_2(-x+1)$



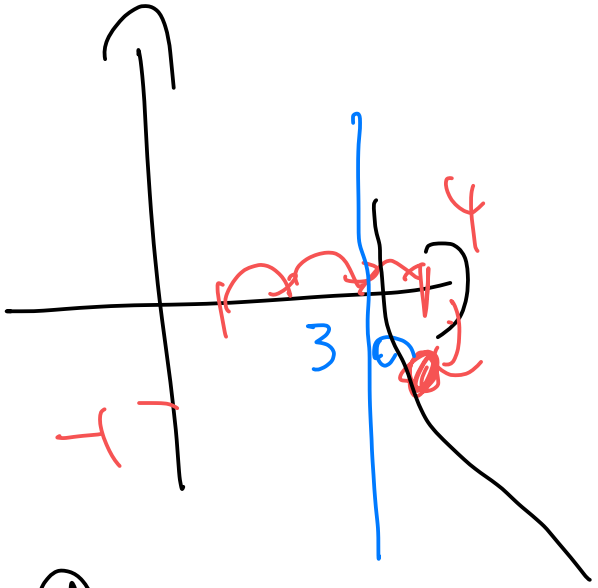
**문제 11.** $y = \log_{\frac{1}{3}}(x-3) - 1 = \log_{3^{-1}}(x-3) - 1 = -\log_3(x-3) - 1$

$y = -\log_3 x$



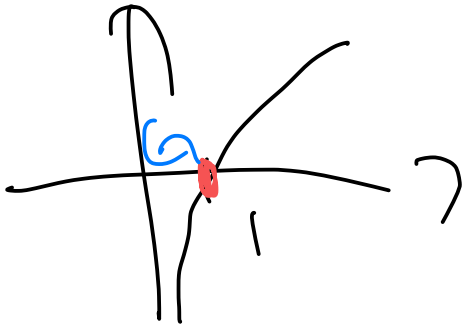

$x$, $3$

$y$, $-1$




**문제 12.** $y = 3\dfrac{\log_2 x}{\log_2 3} - 5 = 3\log_3 x - 5$

$y = 3\log_3 x$




$y$, $-5$