

Ticket Out

$$y = \log_4(x+1) - 4$$

1st step
Domain

$$x+1 > 0$$

$$-1 -1$$

$$x > -1$$

$$D: (-1, \infty)$$

always $R: (-\infty, \infty)$

Asymptote equation

$$x = -1$$

line graph cannot cross

Switch to exponential form

$$y = \log_4(x+1) - 4$$

$$+4$$

exponent

$$4^0$$

$$4^1 \quad y+4=1$$

$$4^2 \quad -4-4$$

$$y = -3$$

$$4^{(3+4)} = x+1$$

$$4^7 = x+1$$

$$y+4 = \log_4(x+1)$$

$$4^{(y+4)} = (x+1)$$

exponent

$$y+4=0$$

$$-4-4 \quad y = -4$$

$$4 = x+1$$

$$x = 3$$

$$4^{(4+4)}$$

$$4^8 = x+1$$

$$1 = x+1$$

1st y-value and solve for x-value

x	y
0	-4
3	-3