

DRILL

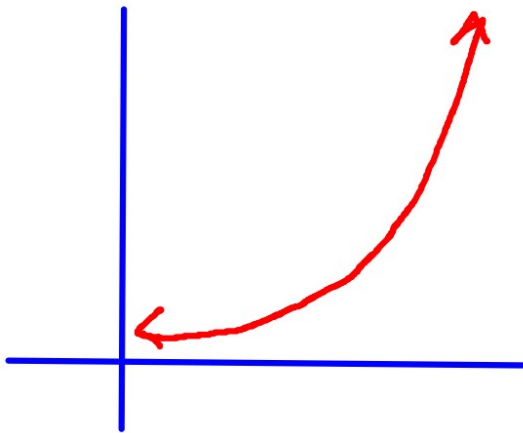
① Find the inverse of: $f^{-1}(x) = 3x+4$

$$f(x) = \frac{x-4}{3} \quad 3x = \frac{y-4}{3} \cdot 3$$
$$y = \frac{x-4}{3} \quad 3x = y-4$$

$$3x+4 = y$$

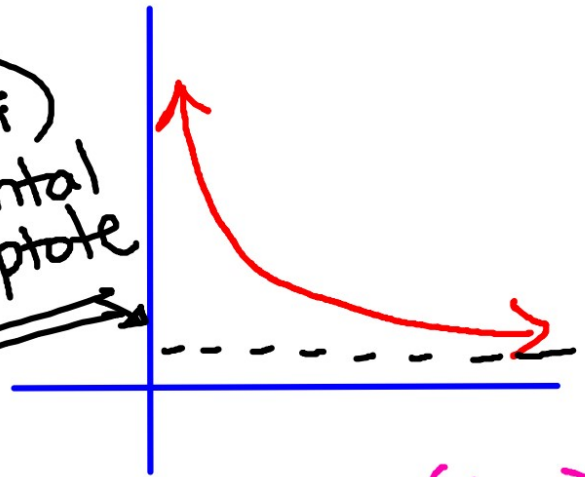
② If $2^x = 8$, then what does x equal? $2 \cdot 2 \cdot 2 = 8$
 $2^3 = 8$
 $x = 3$

* Exponential Growth & Decay *



Growth (up)

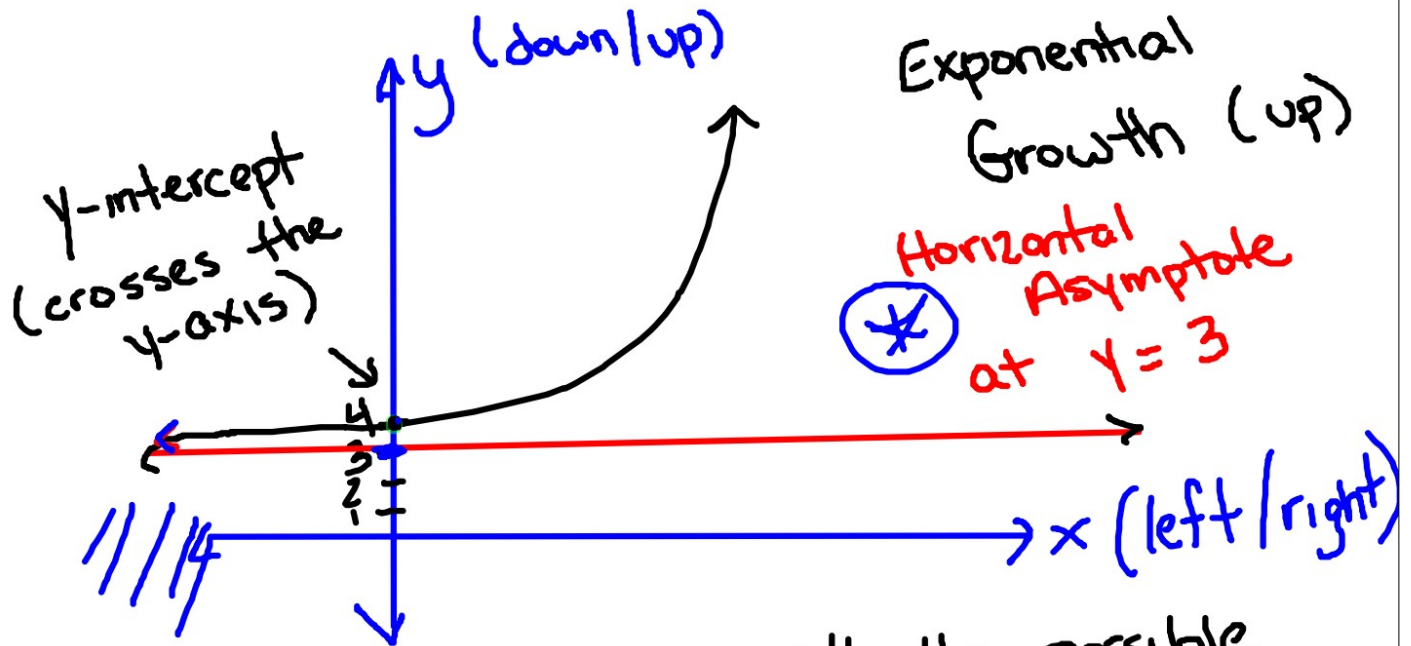
($y = \#$)
Horizontal
Asymptote



Decay (down)

Horizontal \leftrightarrow

Vertical \updownarrow



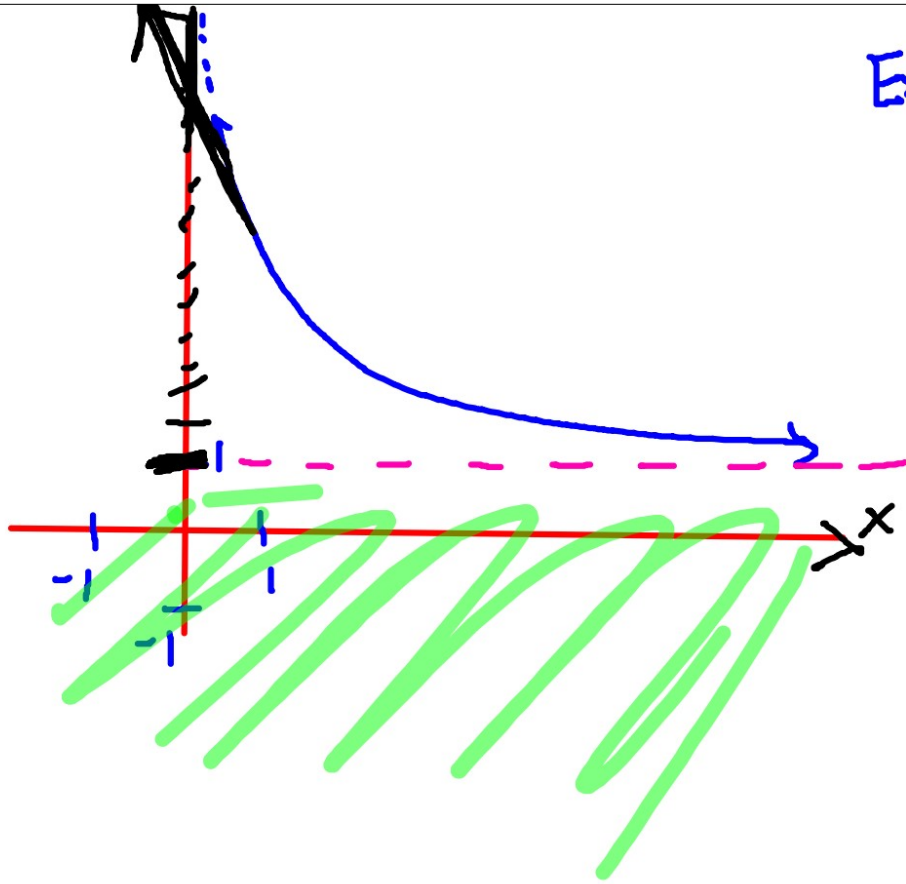
Domain:

All real numbers

Domain: all the possible x-values

Range: all the possible y-values

Range: All real numbers greater than 3. $y > 3$



Exponential
Decay (down)

Horizontal
Asymptote
at $y = 1$

Domain (left/right)
all real #'s

Range: $y > 1$

General Equation Exponentials

"b" is the
base

$$y = a \cdot \underline{b}^x$$

If $b > 1$ (Growth)

If $0 < b < 1$ (Decay)

Ex:

G = growth

D = decay

① $y = 6^x$ Growth

② $y = \frac{1}{3}(4^x)$ Growth

③ $y = 3\left(\frac{2}{5}\right)^x$ Decay

④ $y = 4(8^x) + \frac{1}{3}$ Growth

G, G, D, G