Learning Target: **I can write the equation of an exponential function given a table, graph, or situation.**

U6-2

Write equations for the exponential functions with horizontal asymptotes at $y = 0$ and passing through the following pairs of points.

a. $(2, 135)$ and $(6, 10935)$ $\Rightarrow y = 15(3)^x$ $y = ab^x$

b. $(-1, 55)$ and $(1, 8.8)$ $\Rightarrow y = 22(0.4)^x$

a.)

$y = ab^x$

$135 = ab^2$

$10935 = ab^6$

$\frac{135}{b^2} = a$

$10935 = \frac{135}{b^2} b^6$

$135 = a(3)^2$

$\frac{10935}{135} = \frac{135b^4}{135}$

$135 = a \cdot 9$

$\sqrt[4]{81} = \sqrt[4]{b^4}$

$15 = a$

$3 = b$

b)

$55 = ab^{-1}$

$8.8 = ab^1$

$8.8 = a \cdot 0.4$

$22 = a$

$\frac{55}{b^{-1}} = a$

$8.8 = 55b$

$55b^1 = a$

$8.8 = 55b^2$

$0.16 = b^2$

$0.4 = b$

Mastery Topic: **I can solve a graph a variety of one and two variable inequalities.**

U6-11

Sketch a graph of the inequalities below and shade the solution region.

$$y > |x + 2|$$
$$y \leq 3$$

$y > |x+2|$ { $0 \overset{?}{>} |0+2|$; $0 \overset{?}{>} |2|$; $0 \not> 2$

Boundary

$y = |x+2|$

$a = 1$

$h = -2$

$k = 0$

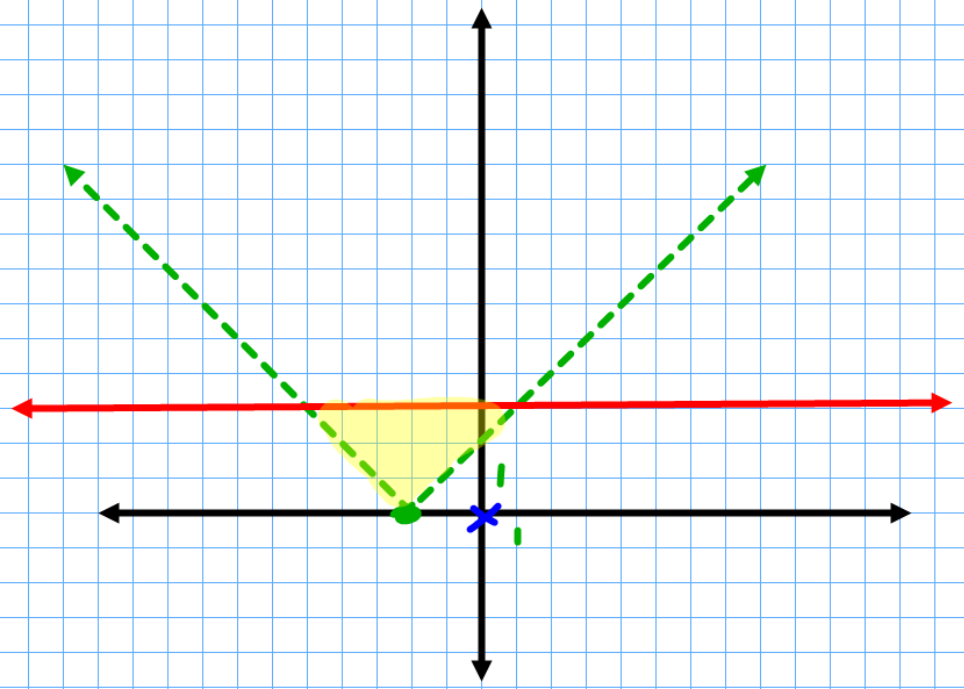
$(-2, 0)$

$y \leq 3$

Boundary

$y = 3$

$0 \overset{?}{\leq} 3$



IAB Focus: **I can review the IAB topic Algebra and Functions II to prepare for the CAASPP.**

U6-14

What is the inverse of each of the functions below? Write your answers in function notation.

a. $g(x) = 2(x^3 + 5)$

b. $k(x) = 3x^2 - 4$

c. $j(x) = \frac{2}{x-3}$

$g^{-1}(x) = \sqrt[3]{\frac{x}{2} - 5}$

$j^{-1}(x) = \frac{2}{x} + 3$

$j(4) = \frac{2}{4-3}$ ✓

$j(4) = 2$

$j^{-1}(2) = \frac{2}{2} + 3$

$j^{-1}(2) = 4$ ✓

a. $g(x)$ cube, +5, ·2

$g(1) = 2(1^3 + 5)$

$g(1) = 12$ ✓

$g^{-1}(x)$ ÷2, −5, $\sqrt[3]{}$

$g^{-1}(12) = \sqrt[3]{\frac{12}{2} - 5}$

$g^{-1}(12) = 1$ ✓

c. $y = \frac{2}{x-3}$

$j^{-1}(x)$ ⇉

$x = \frac{2}{y-3}$

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

$(y-3)(x) = 2 \cdot \frac{y-3}{y-3}$

$\frac{(y-3)(x)}{x} = \frac{2}{x}$

$\frac{x}{x} \cdot y - 3 = \frac{2}{x} + 3$

$+3 \quad +3$

$y = \frac{2}{x} + 3$