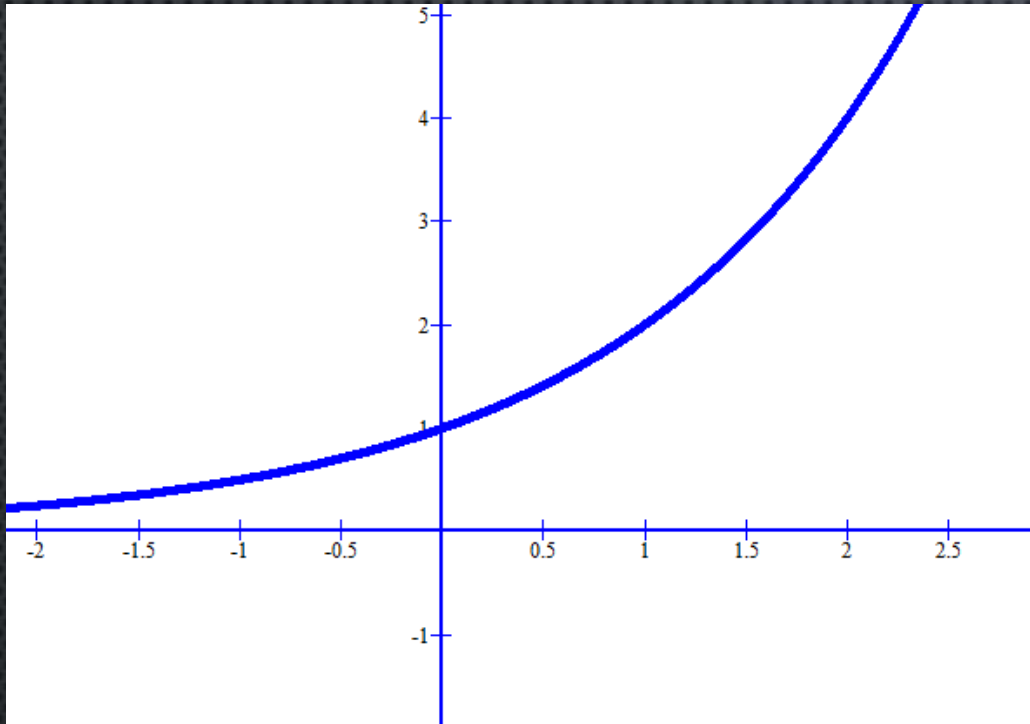




EXPONENTIAL VISUAL SUMMARY

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

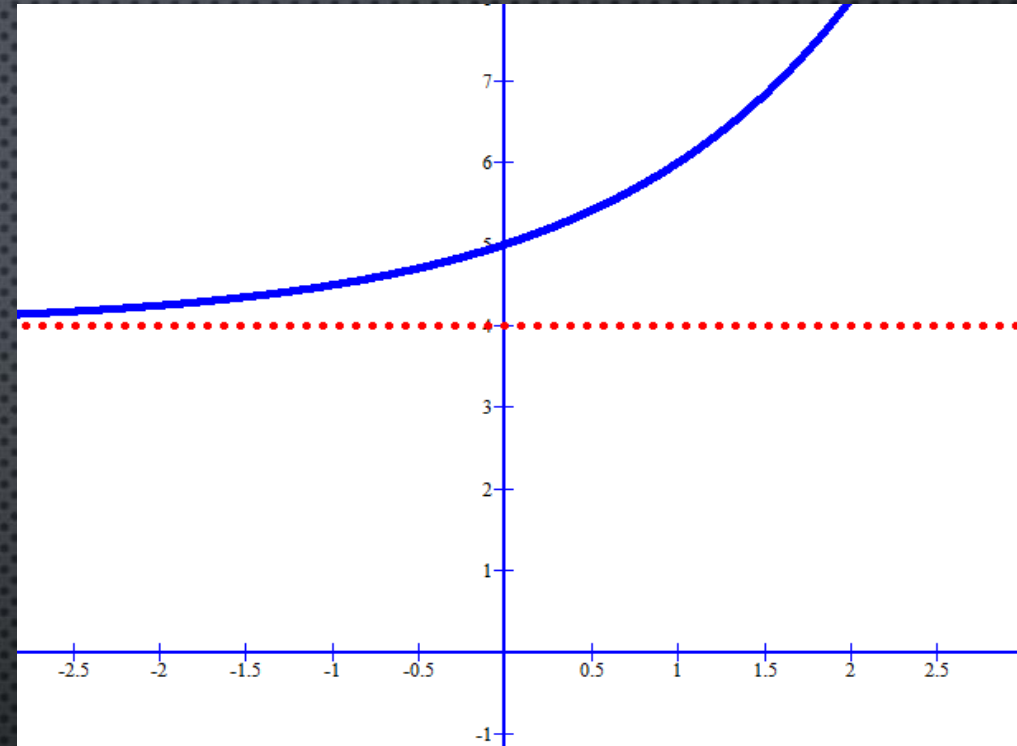
Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): (0 ; 1)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$



$$y = 2^x + 4$$

The graph shifts up 4 units so everything will be shifted up 4 units where applicable.

Asymptote: $y=4$

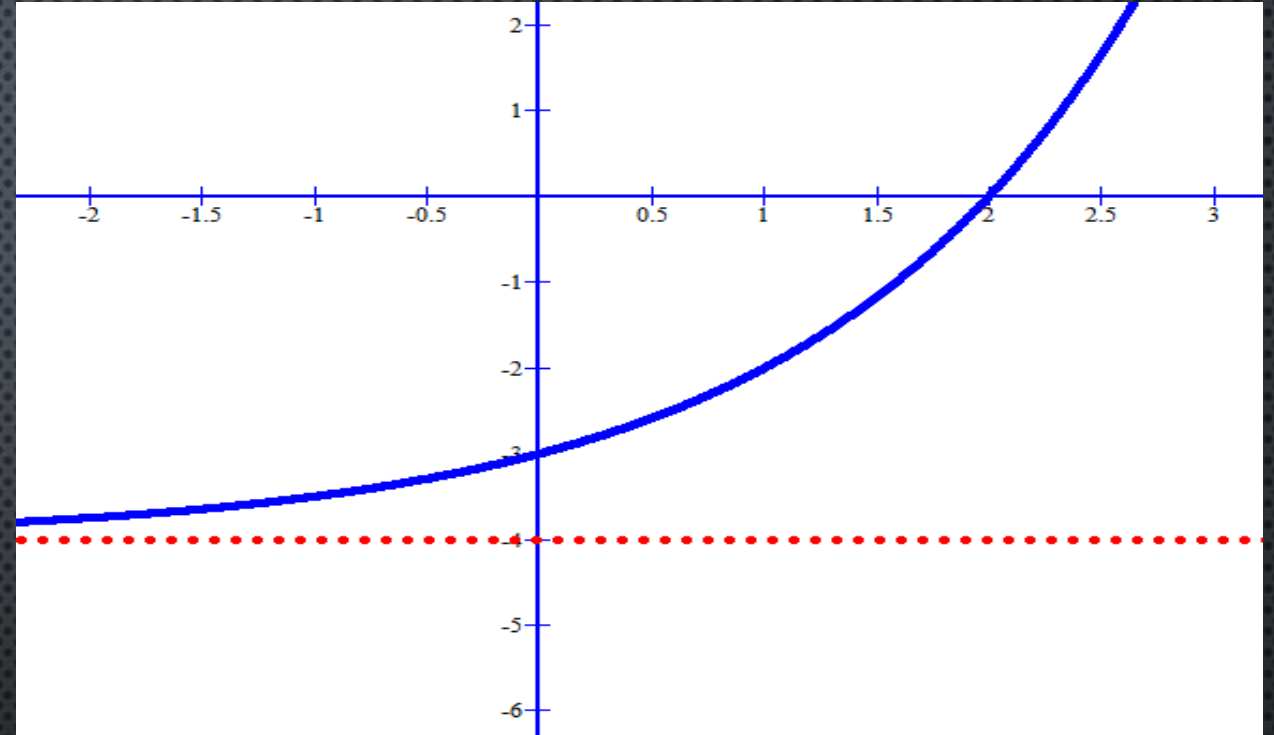
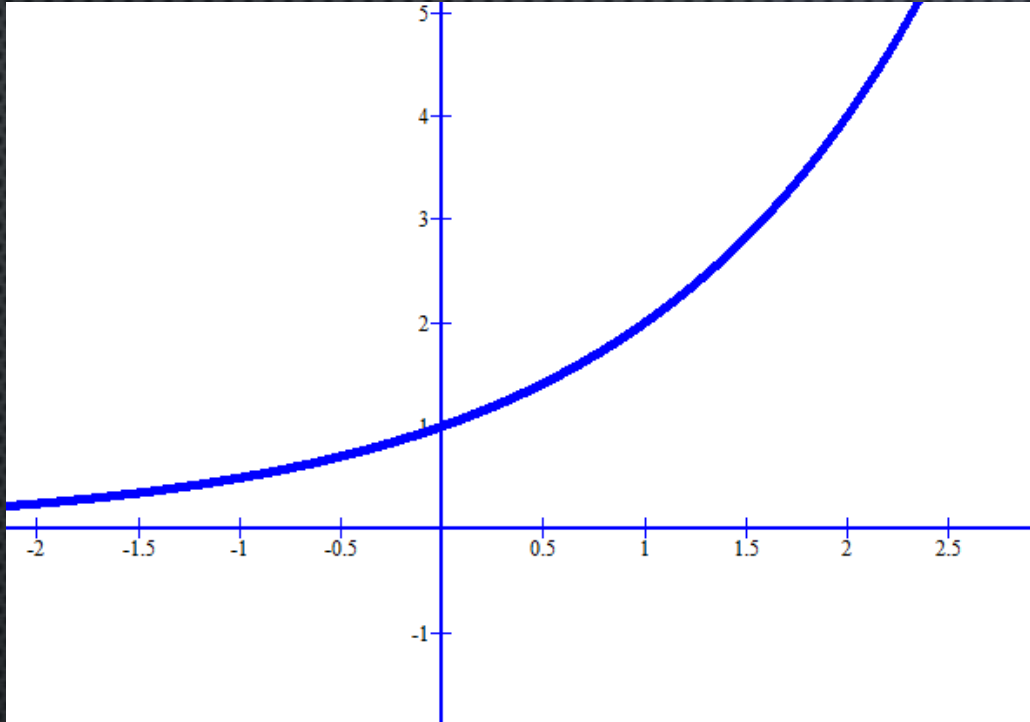
Y-Intercept (when $x=0$): (0 ; 5)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 4$

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): (0 ; 1)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$

$$y = 2^x - 4$$

The graph shifts down 4 units so everything will be shifted down 4 units where applicable.

Asymptote: $y=-4$

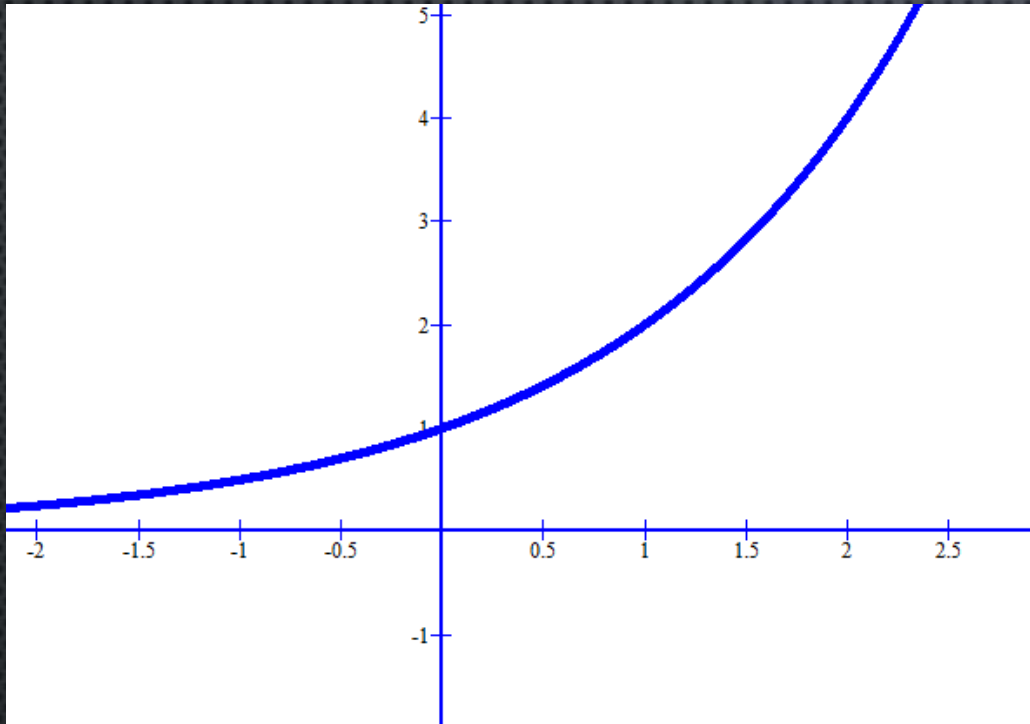
Y-Intercept (when $x=0$): (0 ; -3)

X-Intercept (when $y=0$): (2 ; 0)

Domain: $x \in \mathbb{R}$

Range: $y > -4$

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

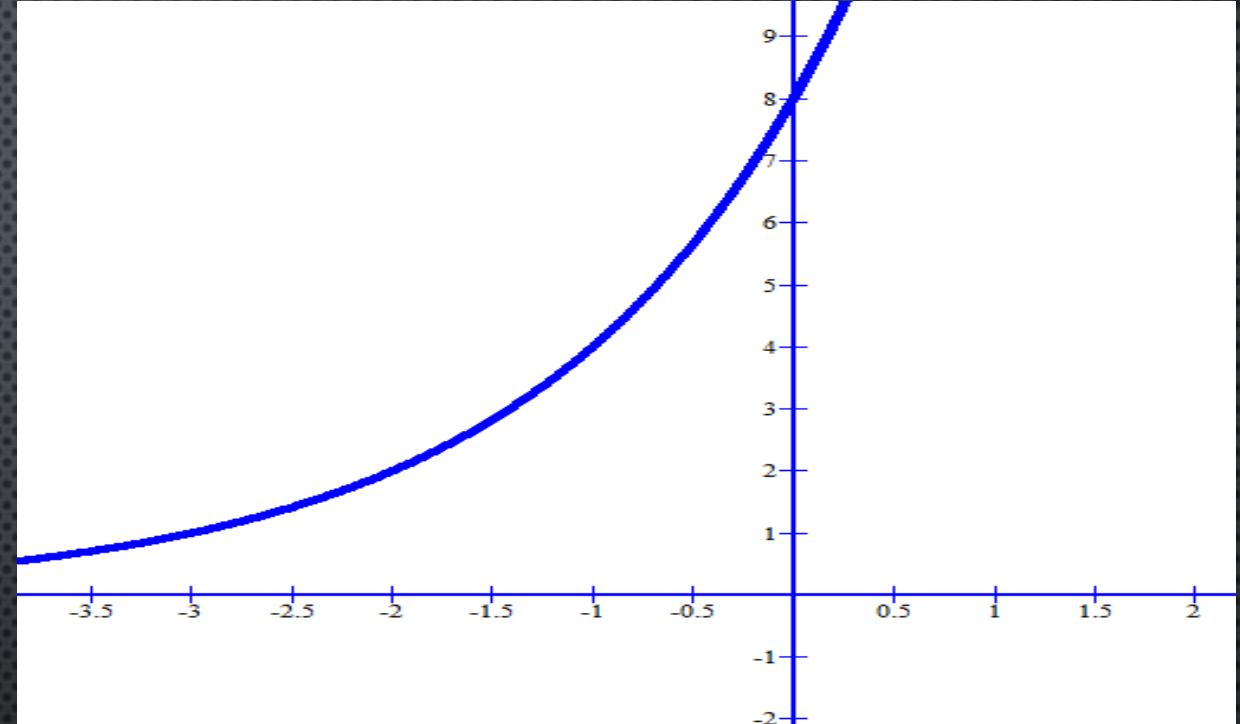
Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): (0 ; 1)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$



$$y = 2^{x+3}$$

The graph shifts left 3 units.

Asymptote: $y=0$

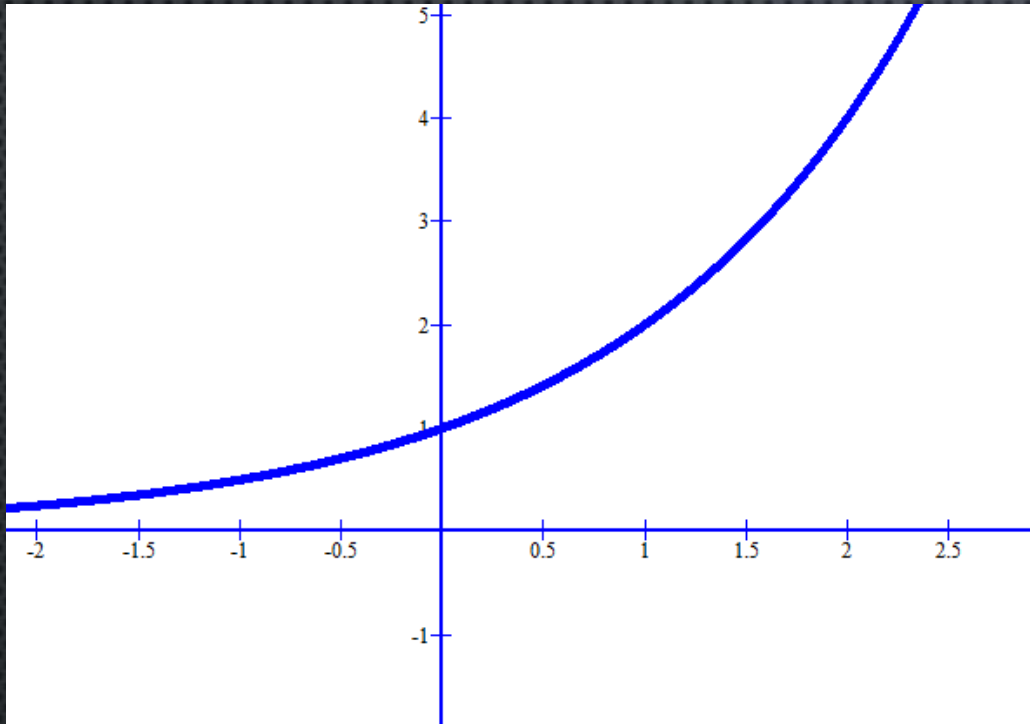
Y-Intercept (when $x=0$): (0 ; 8)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

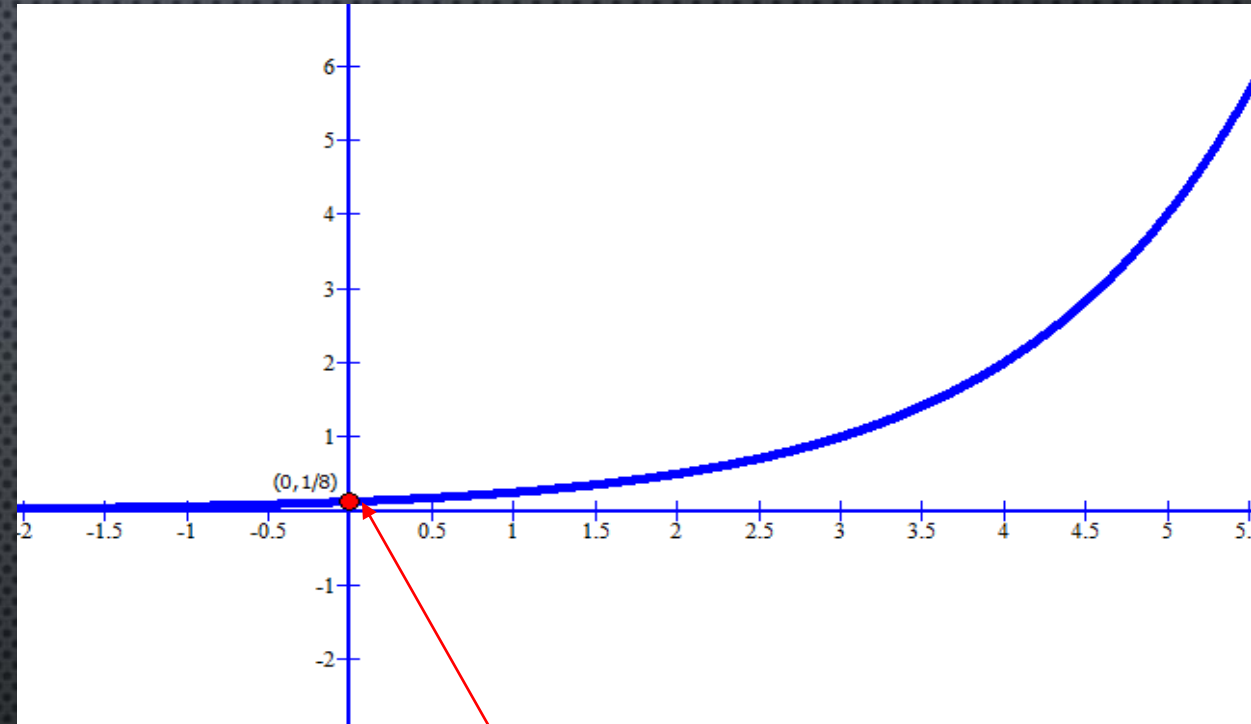
Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): $(0 ; 1)$

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$



$$y = 2^{x-3}$$

The graph shifts right 3 units.

Asymptote: $y=0$

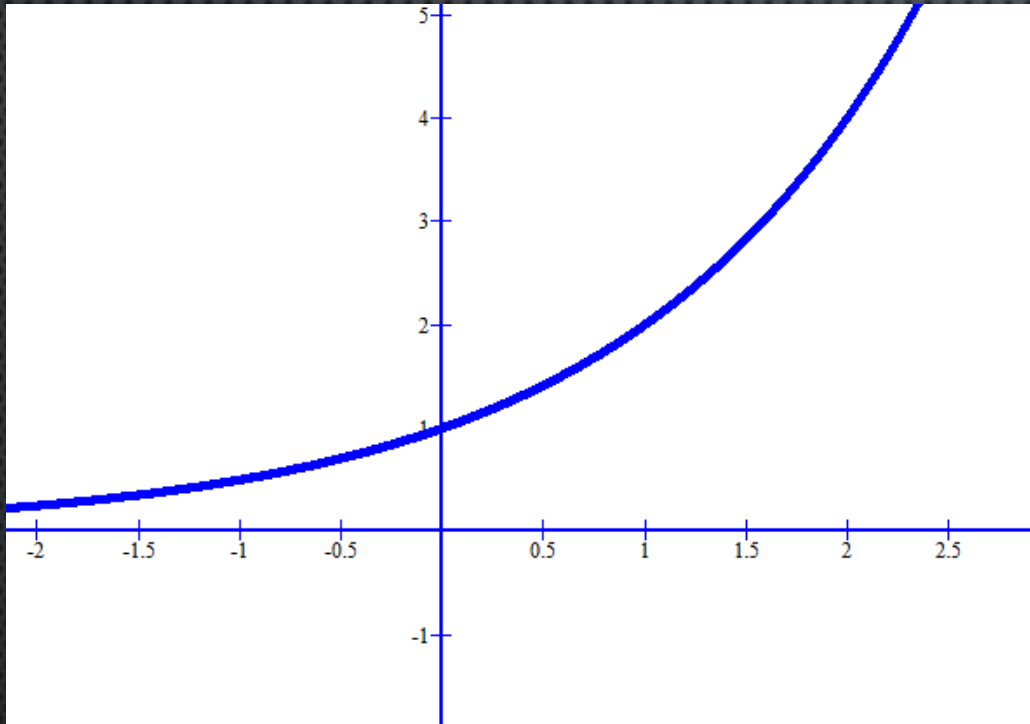
Y-Intercept (when $x=0$): $(0 ; \frac{1}{8})$

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

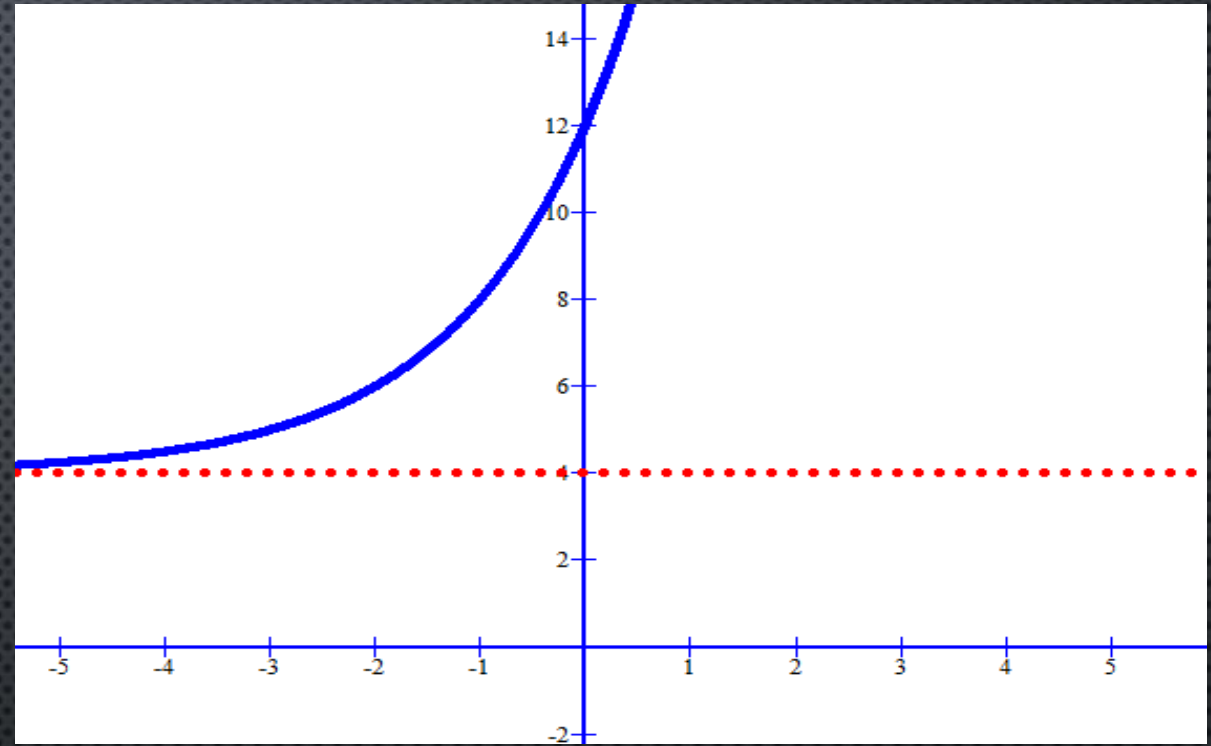
Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): (0 ; 1)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$



$$y = 2^{x+3} + 4$$

The graph shifts left 3 units and 4 units up.

Asymptote: $y=4$

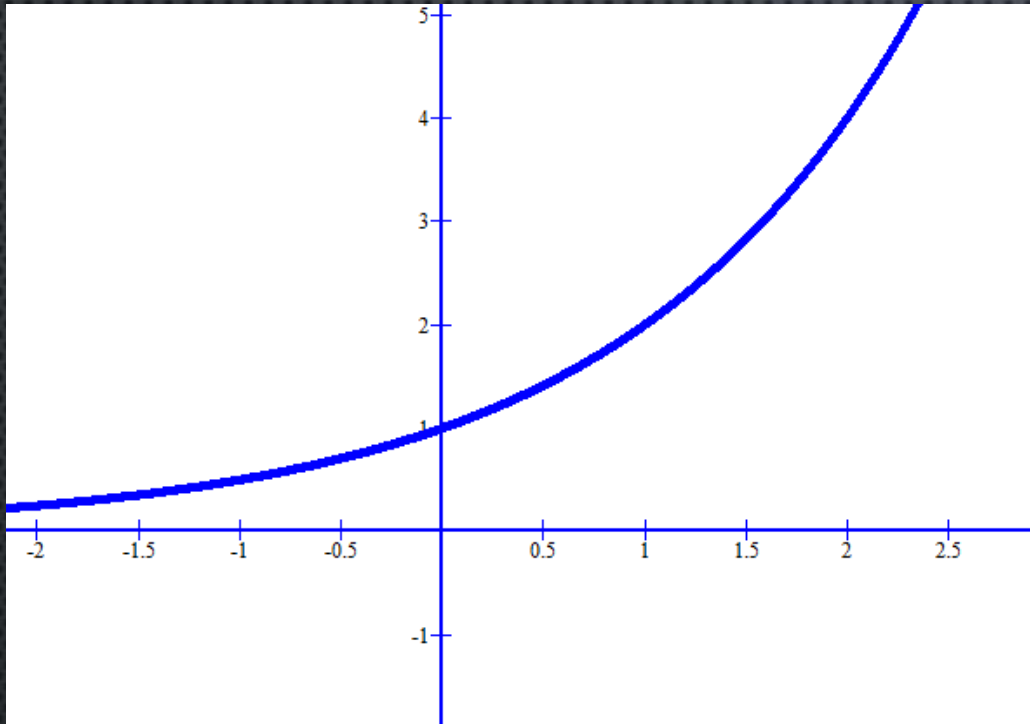
Y-Intercept (when $x=0$): (0 ; 12)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 4$

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

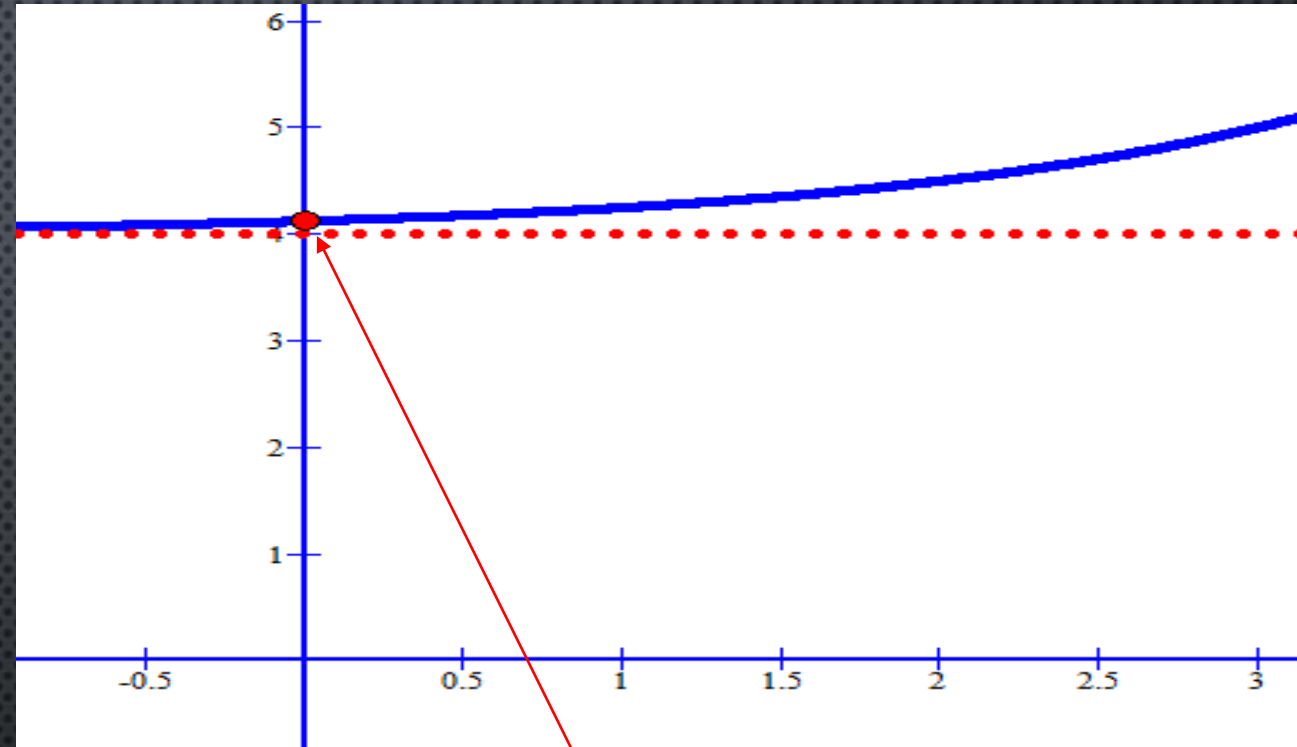
Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): $(0 ; 1)$

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$



$$y = 2^{x-3} + 4$$

The graph shifts right 3 units and 4 units up.

Asymptote: $y=4$

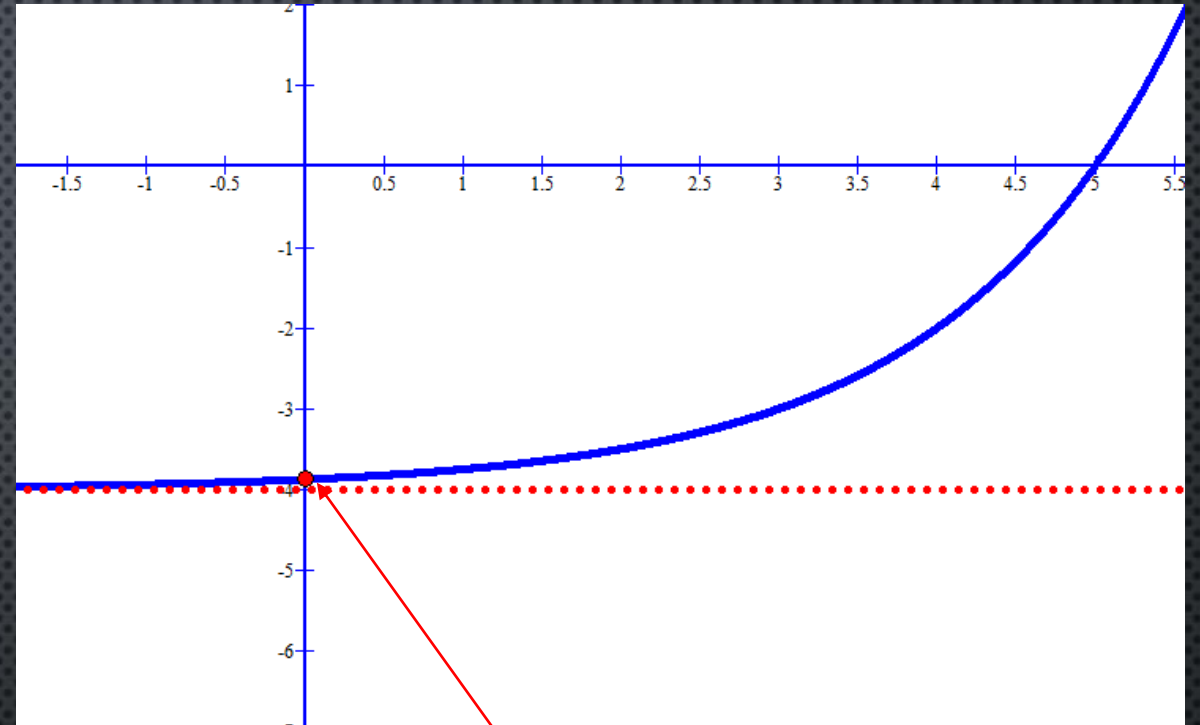
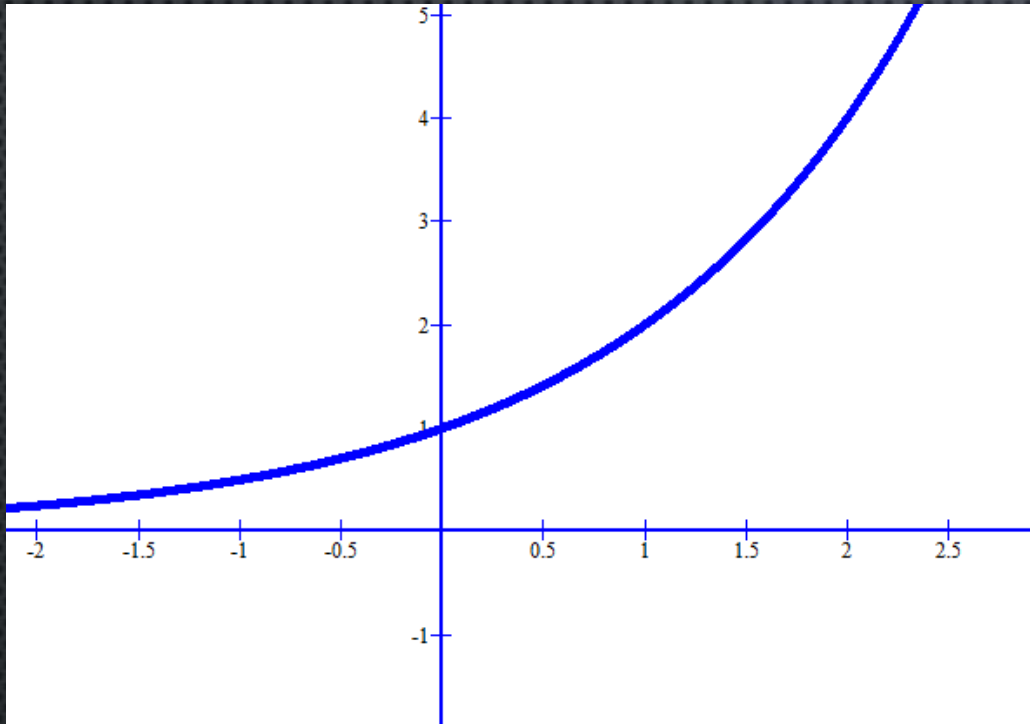
Y-Intercept (when $x=0$): $(0 ; 4\frac{1}{8})$

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 4$

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): (0 ; 1)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$

$$y = 2^{x-3} - 4$$

The graph shifts right 3 units and 4 units down.

Asymptote: $y=-4$

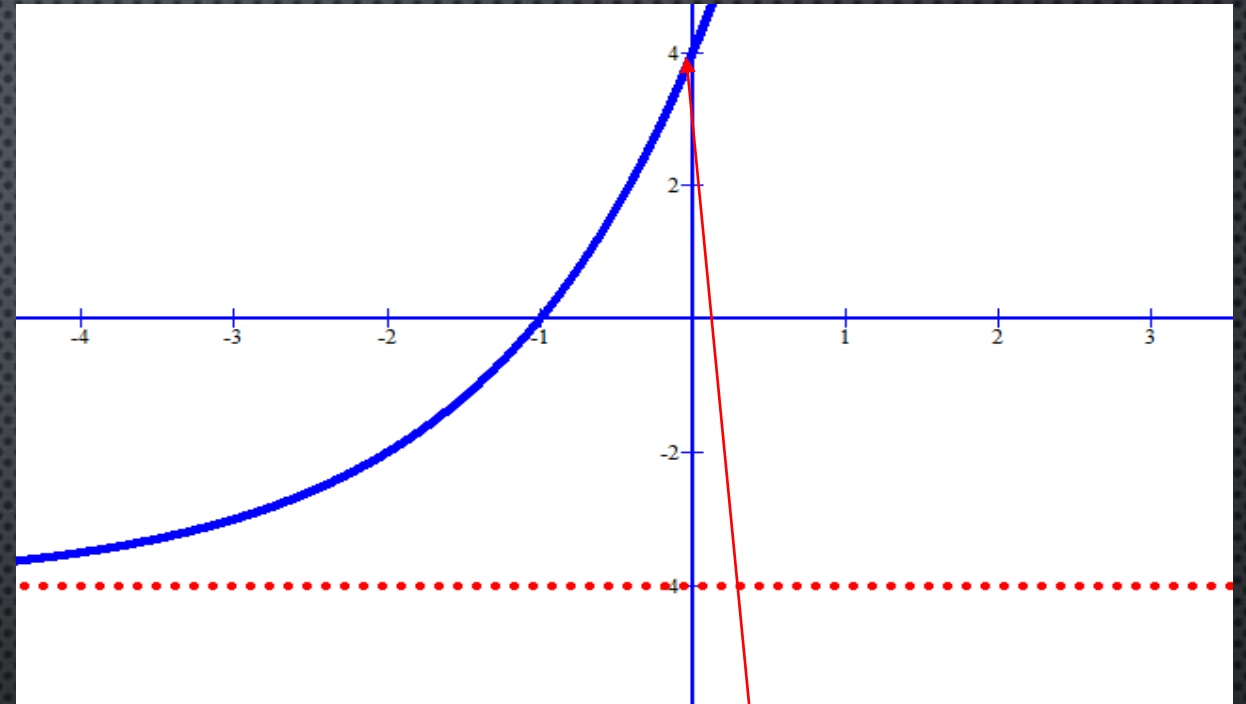
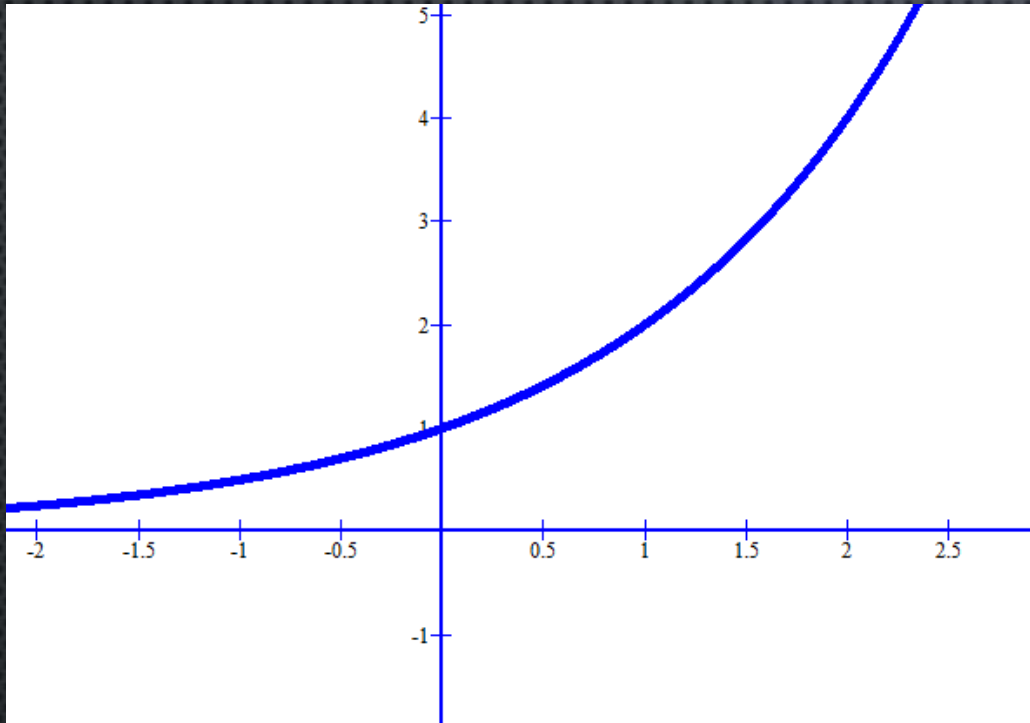
Y-Intercept (when $x=0$): (0 ; $-3\frac{7}{8}$)

X-Intercept (when $y=0$): (5 ; 0)

Domain: $x \in \mathbb{R}$

Range: $y > -4$

GRAPHS – EXPONENTIAL GRAPHS



$$y = 2^x$$

Asymptote: $y=0$ (x-axis)

Y-Intercept (when $x=0$): (0 ; 1)

X-Intercept (when $y=0$): Does not exist

Domain: $x \in \mathbb{R}$

Range: $y > 0$

$$y = 2^{x+3} - 4$$

The graph shifts left 3 units and 4 units down.

Asymptote: $y=-4$

Y-Intercept (when $x=0$): (0 ; 4)

X-Intercept (when $y=0$): (-1 ; 0)

Domain: $x \in \mathbb{R}$

Range: $y > -4$