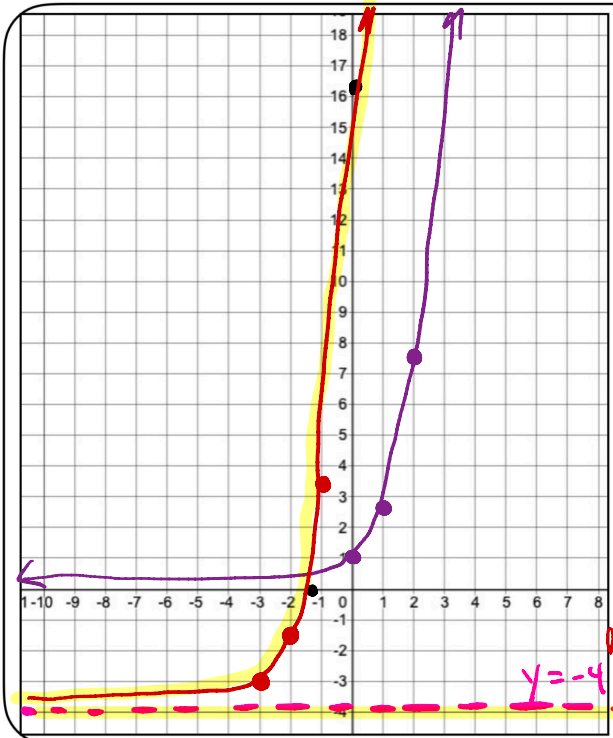
Math III Graphing Exponential Practice Part 2



Graph the function below and supply all the work asked for.

$e^1 = 2.7$
$e^2 = 7.4$

$$f(x) = e^{(x+3)} - 4$$

Parent: e^x

Multiplier: none

Shift: left 3, down 4

X - int: (-1.6, 0)
(do algebraically show your work)

Y - int: (0, 16.1)

Asymptote: $y = -4$

x-int

$0 = e^{(x+3)} - 4$

$+4 \quad +4$

$\ln(4) = \ln e^{(x+3)}$

$\ln 4 = (x+3)\ln(e)$ $\quad \ln e = 1$

$\ln(4) = x + 3$

$-3 \quad -3$

$\ln(4) - 3 = x$

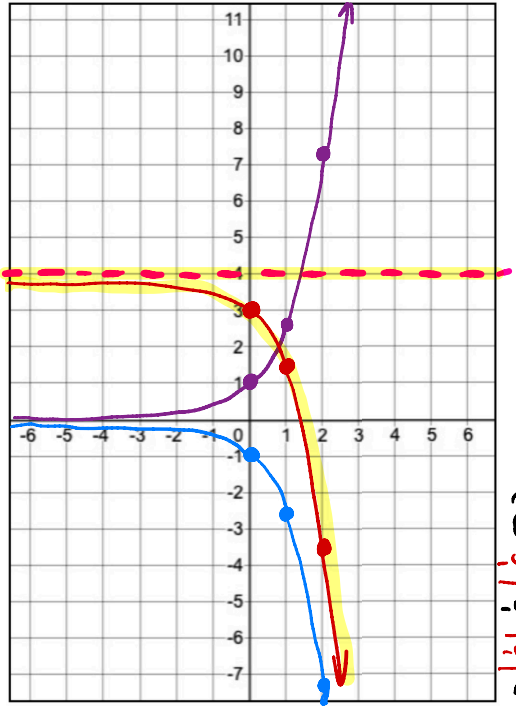
$x \approx -1.6$

y-int

$e^{0+3} - 4$

$e^3 - 4$

≈ 16.1



Graph the function below and supply all the work asked for.

$$f(x) = -e^{(x)} + 4$$

$e^1 = 2.7$

$e^2 = 7.4$

Parent: e^x

Multiplier: -1; multall y's by -1

Shift: up 4

X - int: (1.4, 0)
(do algebraically show your work)

Y - int: (0, 3)

Asymptote: $y = 4$

x-int

$0 = -e^x + 4$

$-4 \quad -4$

$-4 = -e^x$

$\frac{-4}{-1} \quad \frac{-e^x}{-1}$

$4 = e^x$

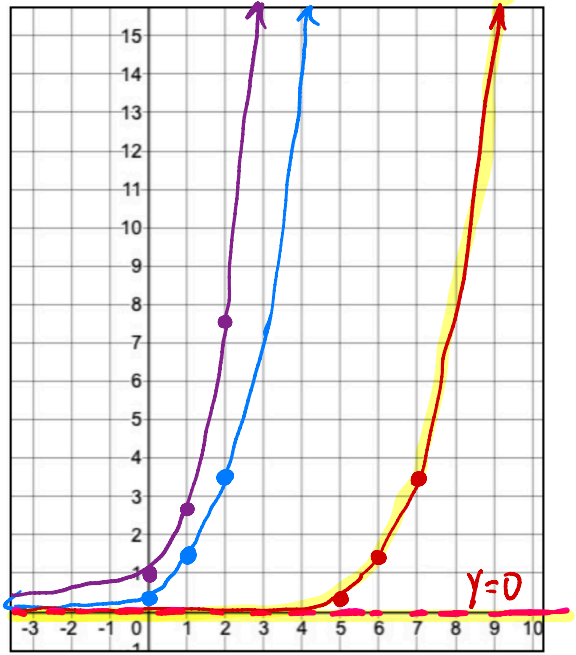
$\ln(4) = x \ln(e)$

$x = \ln(4) \approx 1.4$

y-int

$-e^{(0)} + 4$

$-1 + 4 = 3$



Graph the function below and supply all the work asked for.

$$f(x) = \frac{1}{2}e^{(x-5)}$$

$e^1 = 2.7$

$e^2 = 7.4$

Parent: e^x

Multiplier: $\frac{1}{2}$; mult y's by $\frac{1}{2}$

Shift: right 5

X - int: none
(do algebraically show your work)

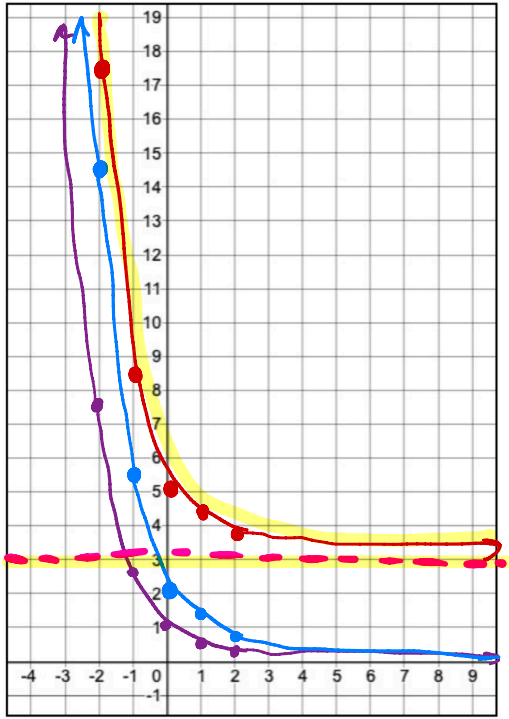
Y - int: $(0, .003)$

Asymptote: $y = 0$

Y-int

$\frac{1}{2}e^{(0-5)}$

$\frac{1}{2}e^{-5}$



Graph the function below and supply all the work asked for.

$$f(x) = 2e^{(-x)} + 3$$

$e^{-1} = .4$

$e^{-2} = .1$

Parent: e^{-x}

Multiplier: 2; mult all y's by 2

Shift: up 3

X - int: none
(do algebraically show your work)

Y - int: (0, 5)

Asymptote: $y = 3$

y-int

$2e^{(-0)} + 3$

$2(1) + 3 = 5$