

1. Classify each of the following exponential functions as either increasing or decreasing and give the value of their y-intercepts.

a) $f(x) = 125(1.25)^x$

y-int = 125 increasing

b) $f(x) = 22(0.75)^x$

y-int = 22 decreasing

c) $f(x) = 256\left(\frac{5}{2}\right)^x$

y-int = 256 increasing

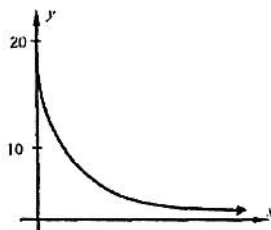
2. Which of the following could be the equation to the exponential function graphed below? Explain how you made your choice.

(1) $y = 15(1.25)^x$

(2) $y = 50(1.04)^x$

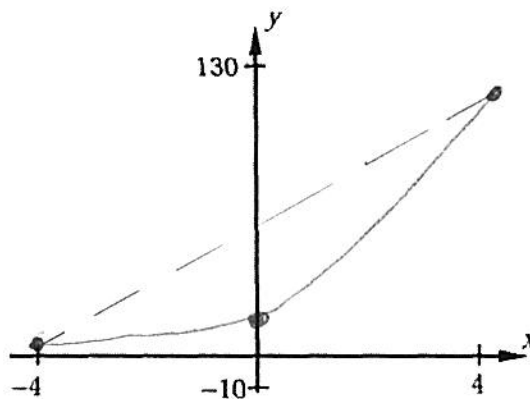
(3) $y = 18(0.75)^x$

(4) $y = 40(0.45)^x$



3. Using your graphing calculator, create a table of values and draw a sketch of the exponential function $y = 3(2.5)^x$ over the interval $-4 \leq x \leq 4$. Use the window indicated.

x	y
-4	.0768
-3	.192
-2	.48
-1	1.2
0	3
1	7.5
2	18.75
3	46.875
4	117.1875



What is the average rate of change of the function over the given interval?

$(-4, .0768)$

$(4, 117.1875)$

$$\frac{\Delta y}{\Delta x} = \frac{117.1875 - .0768}{4 - (-4)} = \frac{117.1107}{8} = 14.6388375$$

4. Which of the following is a decreasing exponential function whose y-intercept is 20?

(1) $y = 20\left(\frac{4}{3}\right)^x$

(2) $y = -2x + 20$

(3) $y = 20\left(\frac{1}{3}\right)^x$

(4) $y = \left(\frac{1}{3}\right)^x + 20$

5. Which of the following functions would best describe the data in the table?

(1) $y = 10x + 2$

(2) $y = 8x + 2$

(3) $y = 5(2)^x$

(4) $y = 2(5)^x$

x	0	1	2	3	4
y	2	10	50	250	1250