

Evaluate each function.

36) $f(x) = 5^{x+3} - 3$; Find $f(-1)$

$$\begin{aligned} f(-1) &= 5^{-1+3} - 3 \\ &= 5^2 - 3 \\ &= 25 - 3 \\ &= \boxed{22} \end{aligned}$$

38) $h(x) = 2 \cdot 5^{x-1} + 1$; Find $h(1)$

$$\begin{aligned} h(1) &= 2 \cdot 5^{1-1} + 1 \\ &= 2 \cdot 5^0 + 1 \\ &= 2 \cdot 1 + 1 \\ &= 2 + 1 \\ &= \boxed{3} \end{aligned}$$

40) $h(x) = 2^{x+1}$; Find $h(0)$

$$\begin{aligned} &= 2^{0+1} \\ &= 2^1 \\ &= \boxed{2} \end{aligned}$$

42) $k(t) = 3^{t+2} - 3$; Find $k(-4t)$

$$k(-4t) = \boxed{3^{-4t+2} - 3}$$

44) $w(x) = 4^{x-1} - 1$; Find $w(-3x)$

$$w(-3x) = \boxed{4^{-3x-1} - 1}$$

37) $h(x) = 5^x$; Find $h(2)$

$$\begin{aligned} h(2) &= 5^2 \\ &= \boxed{25} \end{aligned}$$

39) $f(a) = 2 \cdot 5^a$; Find $f(1)$

$$\begin{aligned} f(1) &= 2 \cdot 5^1 \\ &= 2 \cdot 5 \\ &= \boxed{10} \end{aligned}$$

41) $w(x) = 4^x + 3$; Find $w(-x)$

$$w(-x) = \boxed{4^{-x} + 3}$$

43) $w(a) = 4^{2a} + 3$; Find $w(a^2)$

$$w(a^2) = \boxed{4^{2a^2} + 3}$$

45) $h(a) = -5^{3a}$; Find $h(4+a)$

$$\begin{aligned} h(4+a) &= -5^{3(4+a)} \\ &= \boxed{-5^{12+3a}} \end{aligned}$$

Without graphing, state if each function is exponential growth or exponential decay.

46) $f(x) = 2 \cdot \left(\frac{1}{2}\right)^x$ DECAY

47) $f(x) = \frac{1}{4} \cdot \left(\frac{1}{6}\right)^x$ DECAY

48) $f(x) = \frac{1}{2} \cdot 3^x$ GROWTH

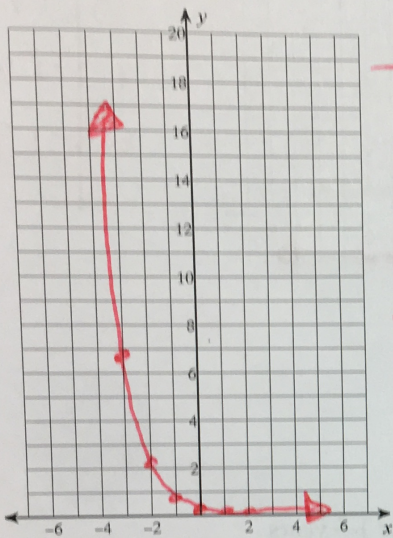
49) $f(x) = 2 \cdot 3^x$ GROWTH

50) $f(x) = \frac{1}{4} \cdot \left(\frac{1}{5}\right)^x$ DECAY

51) $f(x) = 5 \cdot 2^x$ GROWTH

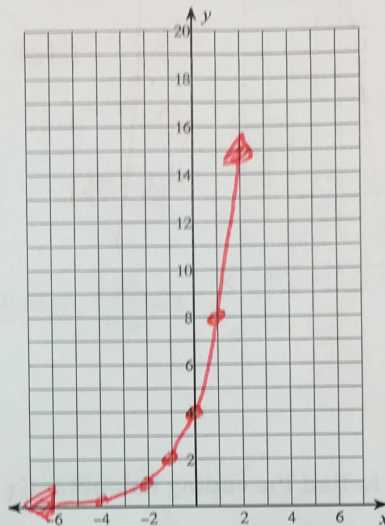
Sketch the graph of each function.

52) $f(x) = \frac{1}{4} \cdot \left(\frac{1}{3}\right)^x$



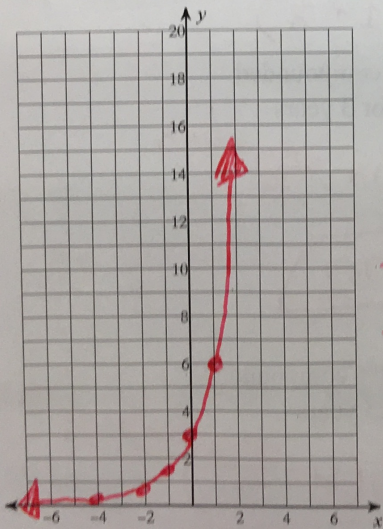
x	y
0	.25
1	.083
2	.028
-1	.75
-2	2.25
-3	6.75

53) $f(x) = 4 \cdot 2^x$



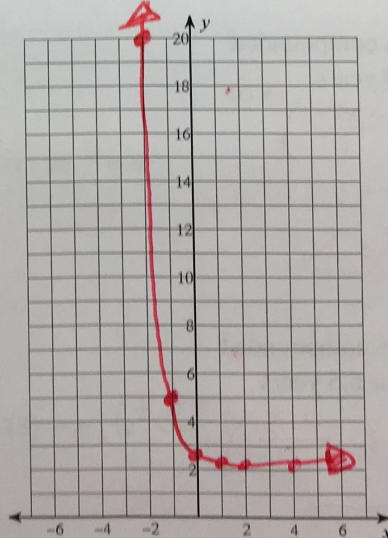
x	y
0	4
1	8
-1	2
-2	1
-4	.25

54) $f(x) = 3 \cdot 2^x$



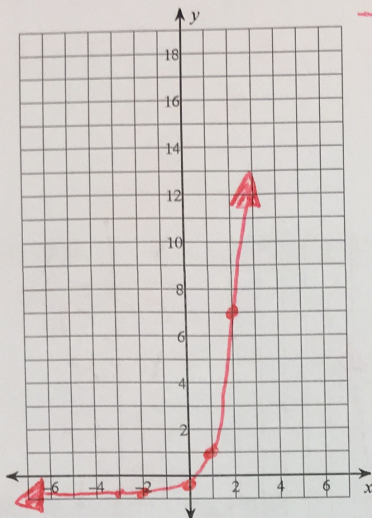
x	y
0	3
1	6
-1	1.5
-2	0.75
-4	0.188

55) $f(x) = \frac{1}{2} \cdot \left(\frac{1}{6}\right)^x + 2$



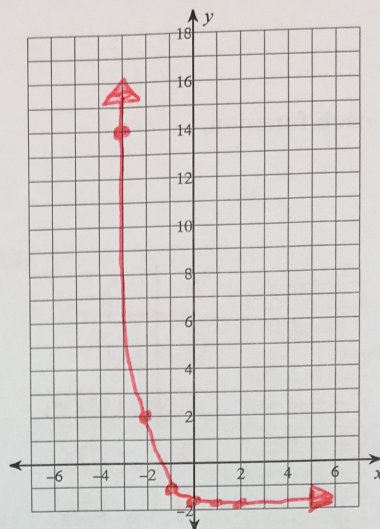
x	y
0	2.5
-1	5
-2	20
1	2.083
2	2.014
4	2.0004

$$56) f(x) = \frac{1}{2} \cdot 4^x - 1$$



x	y
0	-0.5
1	1
-2	-0.969
-3	-0.992
2	7
3	31

$$57) f(x) = \frac{1}{4} \cdot \left(\frac{1}{4}\right)^x - 2$$



x	y
0	-1.75
-1	-1
-2	2
-3	14
1	-1.938
2	-1.984

Use simple interest to find the ending balance. $A = P(1 + rt)$

58) \$1,400 at 1.3% for 2 years

$$A = 1400(1 + 0.013 * 2)$$

$$A = \$1430.40$$

59) \$160 at 5.5% for $1\frac{1}{2}$ years

$$A = 160(1 + 0.055 * 1.5)$$

$$A = \$173.20$$

Find the total value of the investment after the time given. $A = P\left(1 + \frac{r}{n}\right)^{nt}$

60) \$7,300 at 2.9% compounded annually for 10 years

$$A = 7300\left(1 + \frac{0.029}{1}\right)^{1 * 10}$$

$$A = \$9715.76$$

61) \$255 at 10.1% compounded semiannually for 3 years

$$A = 255\left(1 + \frac{0.101}{2}\right)^{2 * 3}$$

$$A = \$342.70$$

62) \$34,000 at 1.5% compounded semiannually for 6.5 years

$$A = 34,000\left(1 + \frac{0.015}{2}\right)^{2 * 6.5}$$

$$A = \$37,468.36$$

63) \$38,600 at 8.12% compounded monthly for 2.25 years

$$A = 38,600\left(1 + \frac{0.0812}{12}\right)^{12 * 2.25}$$

$$A = \$46,309.03$$