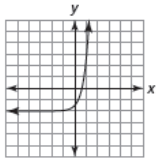


F-IF.B: Skills Practice Problems

1.3 #13-18

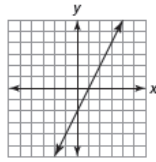
Determine whether each graph represents an increasing function, a decreasing function, a constant function, or a combination of increasing and decreasing functions.

13.

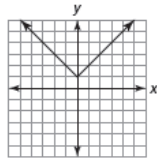


The graph represents an increasing function.

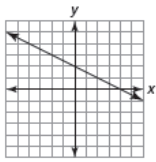
14.



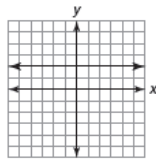
15.



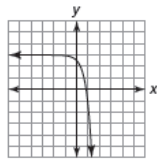
16.



17.



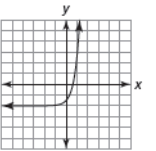
18.



1.3 #25-30

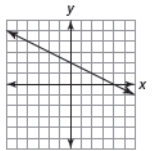
Determine whether each graph represents a linear function, a quadratic function, an exponential function, a linear absolute value function, a linear piecewise function, or a constant function.

25.

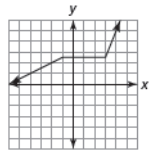


The graph represents an exponential function.

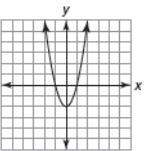
26.



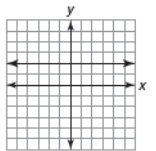
27.



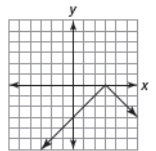
28.



29.



30.

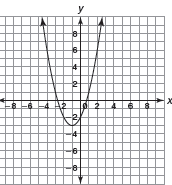


1.4 #17-22

Choose the function family represented by each graph.

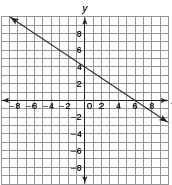
linear function	quadratic function	exponential function
linear absolute value function	linear piecewise function	

17.

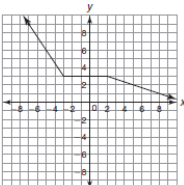


The graph represents a quadratic function.

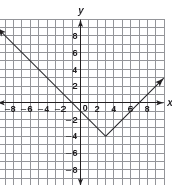
18.



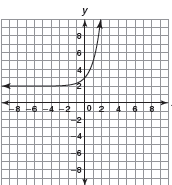
21.



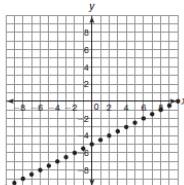
19.



20.



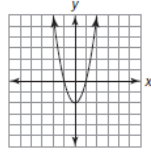
22.



1.3 #19-24

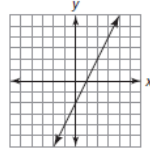
Determine whether each graph represents a function with an absolute minimum, an absolute maximum, or neither.

19.

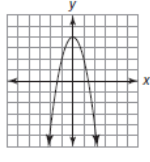


The graph represents a function with an absolute minimum.

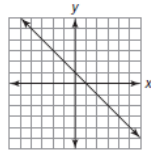
20.



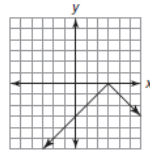
21.



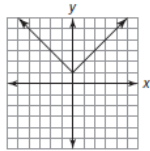
22.



23.



24.



1.4 #1-10

Choose the appropriate function family or families to complete each sentence based on the given characteristic(s).

linear functions	quadratic functions
exponential functions	linear absolute value functions

- The graph of this function family is a straight line. The function family is linear functions.
- The graph of this function family has an increasing interval and a decreasing interval. The function family is _____.
- The graph of this function family has an absolute minimum. The function family is _____.
- The graph of this function family is decreasing over the entire domain. The function family is _____.
- The graph of this function family forms a V shape. The function family is _____.
- The graph of this function family has an increasing interval and a decreasing interval and forms a U shape. The function family is _____.
- The graph of this function family does not have an absolute maximum or absolute minimum and is a smooth curve. The function family is _____.
- The graph of this function family has an absolute maximum or absolute minimum and is made up straight lines. The function family is _____.
- The graph of this function family is made up straight lines and does not have an absolute maximum or absolute minimum. The function family is _____.
- The graph of this function family decreases over the entire domain and is a smooth curve. The function family is _____.

2.2 #7-12

Identify the input value, the output value, the y-intercept, and the rate of change for each function.

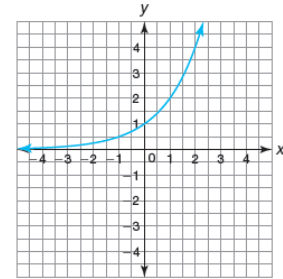
- A hot air balloon at 130 feet begins to ascend. It ascends at a rate of 160.5 feet per minute. The function $f(t) = 160.5t + 130$ represents the height of the balloon as it ascends.
The input value is t , time in minutes. The output value is $f(t)$, height in feet.
The y-intercept is 130. The rate of change is 160.5.
- A backyard pool contains 500 gallons of water. It is filled with additional water at a rate of 6 gallons per minute. The function $f(t) = 6t + 500$ represents the volume of water in the pool as it is filled.
- A submarine is diving from the surface of the water at a rate of 17 feet per minute. The function $f(t) = -17t$ represents the depth of the submarine as it dives.
- A helicopter flying at 3505 feet begins its descent. It descends at a rate of 470 feet per minute. The function $f(t) = -470t + 3505$ represents the height of the helicopter as it descends.
- A bathtub contains 5 gallons of water. The faucet is turned on and water is added to the tub at a rate of 4.25 gallons per minute. The function $f(t) = 4.25t + 5$ represents the volume of water in the bathtub as it is filled.
- A free-diver is diving from the surface of the water at a rate of 8 feet per minute. The function $f(t) = -8t$ represents the depth of the diver.

5.2 #19-24

Complete each table and graph the function. Identify the x-intercept, y-intercept, asymptote, domain, range, and interval(s) of increase or decrease for the function.

19. $f(x) = 2^x$

x	f(x)
-2	$\frac{1}{4}$
-1	$\frac{1}{2}$
0	1
1	2
2	4



x-intercept: none

y-intercept: (0, 1)

asymptote: $y = 0$

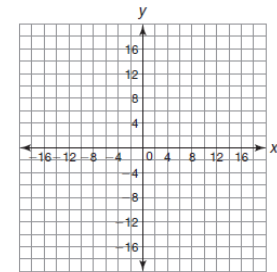
domain: all real numbers

range: $y > 0$

interval(s) of increase or decrease: increasing over the entire domain

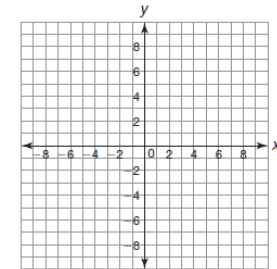
20. $f(x) = 4^x$

x	f(x)
-2	
-1	
0	
1	
2	



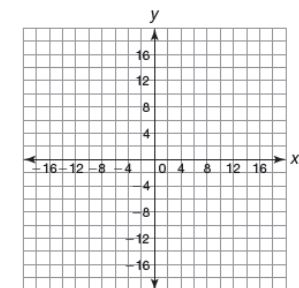
21. $f(x) = \frac{1}{3}^x$

x	f(x)
-2	
-1	
0	
1	
2	



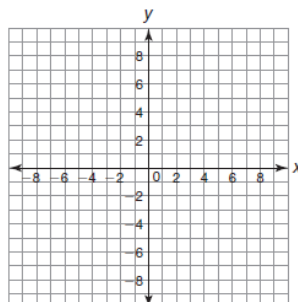
22. $f(x) = \frac{1}{4}^x$

x	f(x)
-2	
-1	
0	
1	
2	



24. $f(x) = -2 \cdot \frac{1}{2}^x$

x	f(x)
-2	
-1	
0	
1	
2	



23. $f(x) = -2 \cdot 2^x$

x	f(x)
-2	
-1	
0	
1	
2	

