

6.10 Linear, Exponential and Quadratic Functions

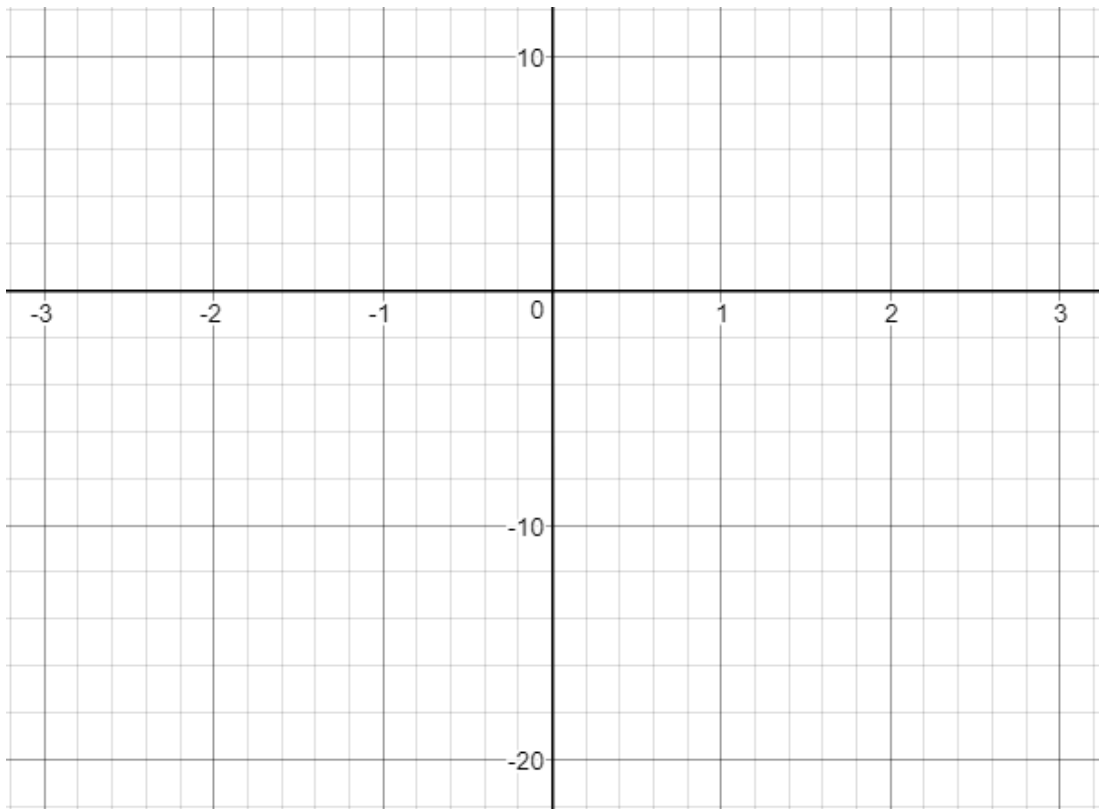
Complete each of the following tables of values and then graph each function.

$$y = 3x - 2$$

x	y	1st diff	2nd diff	3rd diff	4th diff
-3					
-2					
-1					
0					
1					
2					
3					

$$y = \frac{4}{5}x + 1$$

x	y	1st diff	2nd diff	3rd diff	4th diff
-3					
-2					
-1					
0					
1					
2					
3					

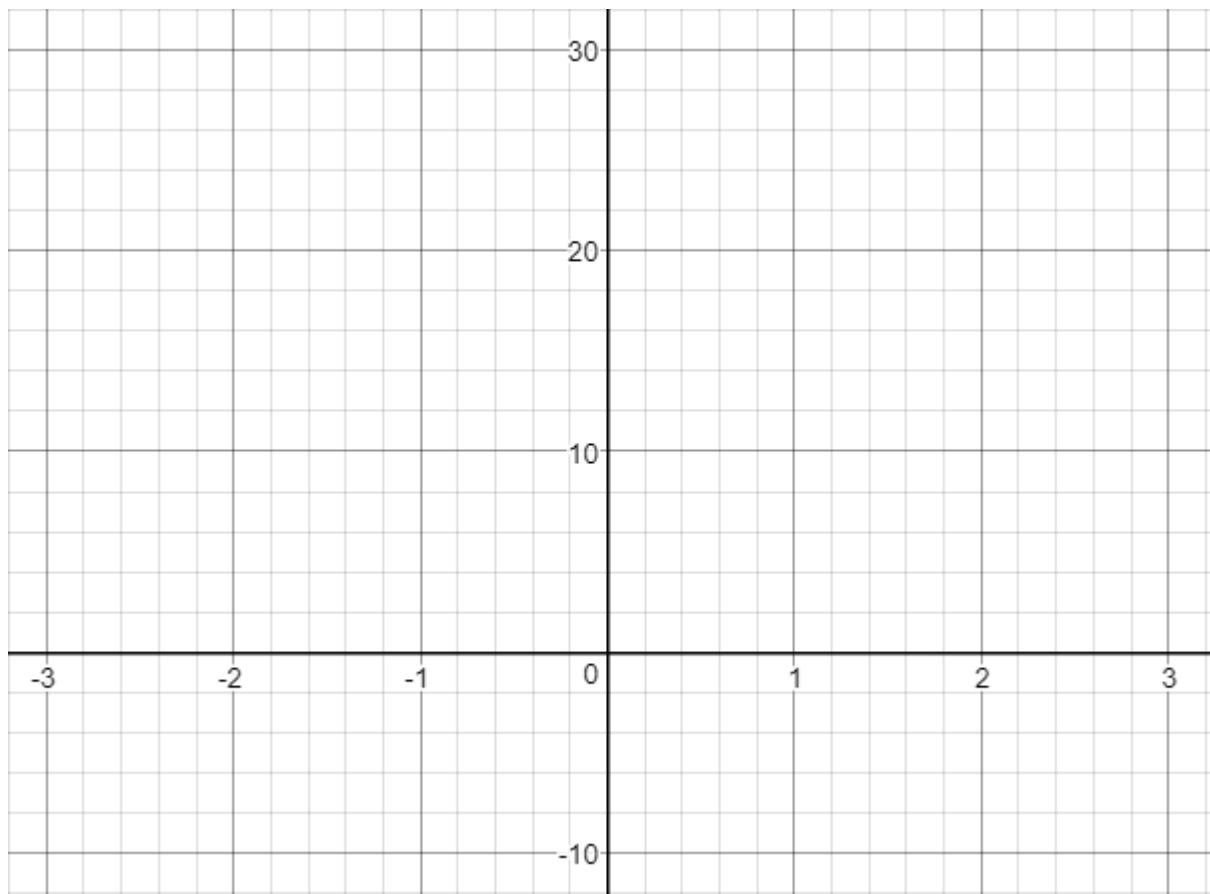


$$y = 2(x - 1)^2 - 6$$

<i>x</i>	<i>y</i>	<i>1st diff</i>	<i>2nd diff</i>	<i>3rd diff</i>	<i>4th diff</i>
-3					
-2					
-1					
0					
1					
2					
3					

$$y = -0.5(x + 2)^2 + 5$$

<i>x</i>	<i>y</i>	<i>1st diff</i>	<i>2nd diff</i>	<i>3rd diff</i>	<i>4th diff</i>
-3					
-2					
-1					
0					
1					
2					
3					

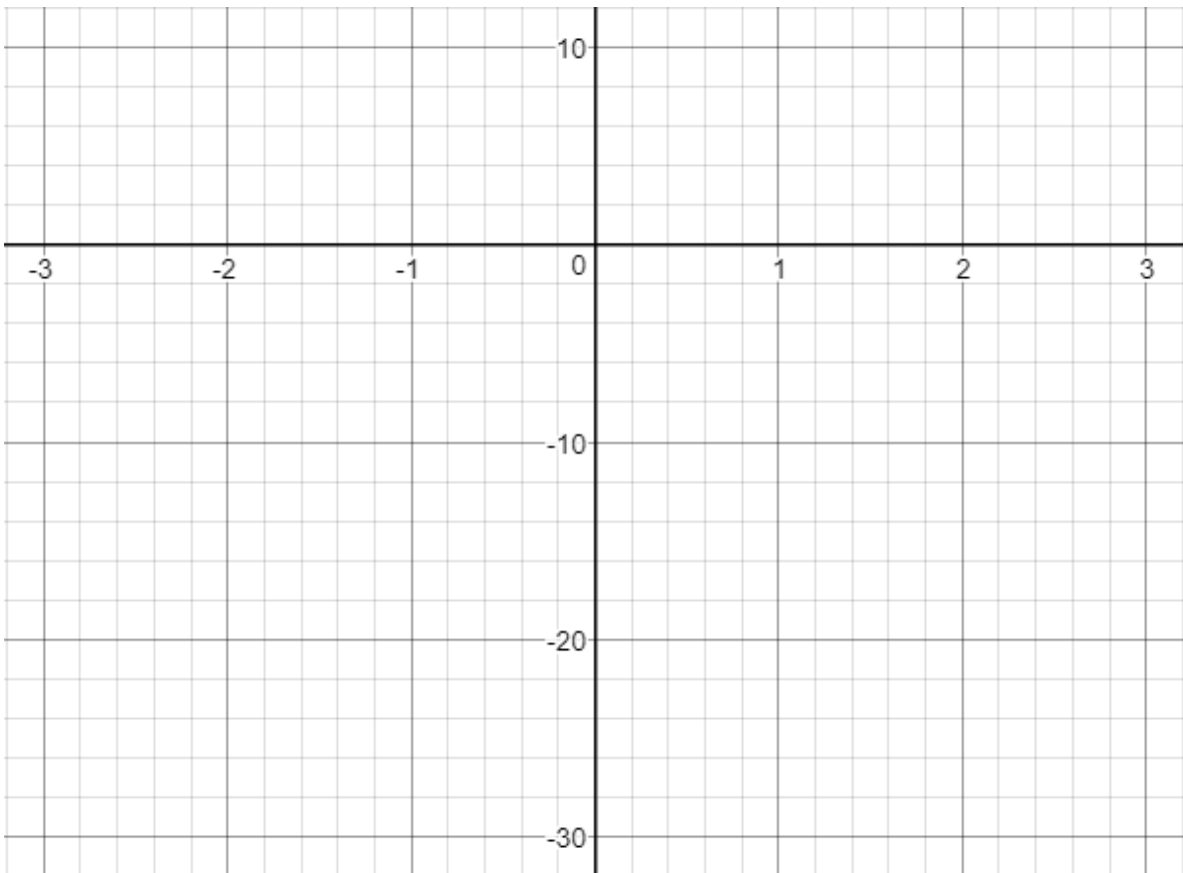


$$y = 2^x$$

x	y	1st diff	2nd diff	3rd diff	4th diff
-3					
-2					
-1					
0					
1					
2					
3					

$$y = -(3)^x$$

x	y	1st diff	2nd diff	3rd diff	4th diff
-3					
-2					
-1					
0					
1					
2					
3					



For each type of function in the previous pages, describe the equation, graph and table of values.

	Equation	Graph	Table of Values
Linear			
Quadratic			
Exponential			

How can I tell if a data set is linear, quadratic, or exponential?

A

x	y
0	2
1	5
2	8
3	11
4	14

B

x	y
0	3
1	4
2	7
3	12
4	19

C

x	y
0	1
1	3
2	9
3	27
4	81

Practice

Is it linear, quadratic, or exponential?

A

x	y
0	1
1	5
2	11
3	19
4	29

B

x	y
0	3
1	7
2	11
3	15
4	19

C

x	y
0	3
1	4
2	8
3	18
4	31

D

x	y
0	1
1	4
2	16
3	64
4	256

E

x	y
0	1
1	8
2	15
3	22
4	29