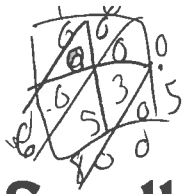


Casey Hull

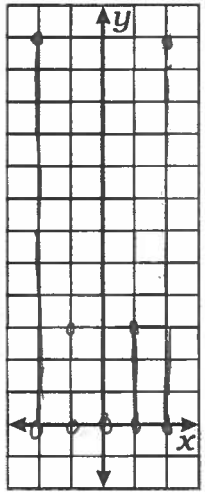
Who Is An Expert at Catching Small Green Vegetables?

Complete each table and graph. For table cells with letters, write the letter in the corresponding box at the right.

2	5	−3	−1	0	12	9	1	−7	−8	8	−5	6	3	7	−12	4	−2
A		T		A			P		A			A	R		I		T

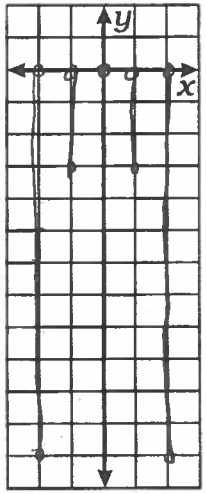
1 $y = 3x^2$

x	y	
2	12	
1	3	
0	0	
−1	3	R
−2	12	



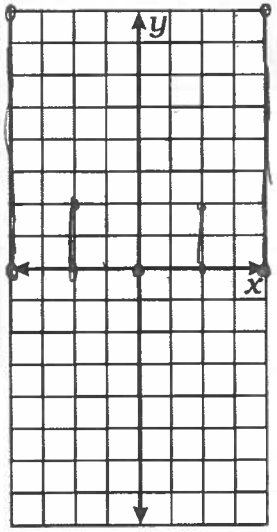
2 $y = -3x^2$

x	y	
2	−12	
1	−3	
0	0	A
−1	−3	
−2	−12	I



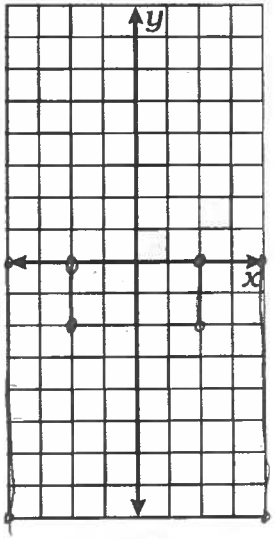
3 $y = \frac{1}{2}x^2$

x	y	
4	8	
2	2	A
0	0	
−2	2	
−4	8	S



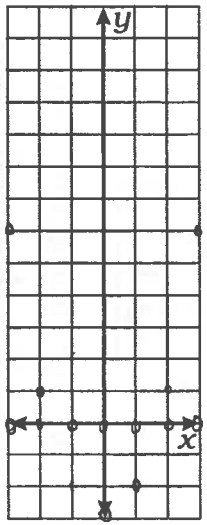
4 $y = -\frac{1}{2}x^2$

x	y	
4	−8	A
2	−2	
0	0	
−2	−2	T
−4	−8	



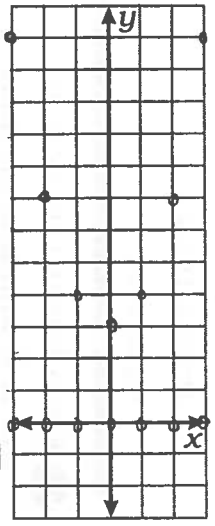
5 $y = x^2 - 3$

x	y	
3	6	
2	1	
1	−2	
0	−3	T
−1	−2	
−2	−1	
−3	6	A



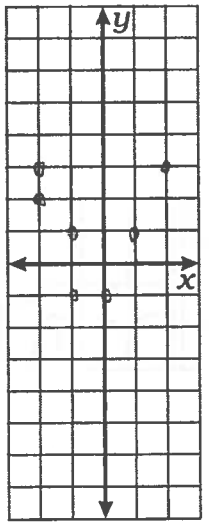
6 $y = x^2 + 3$

x	y	
3	12	P
2	7	
1	4	
0	3	
−1	4	S
−2	7	
−3	12	



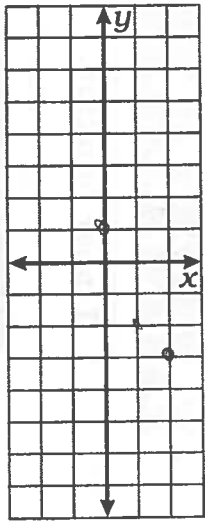
7 $y = 2x^2 - 1$

x	y	
2	3	
1	1	P
0	−1	
−1	1	
−2		T



8 $y = -2x^2 + 1$

x	y	
2	−3	E
1	−2	
0		
−1		R
−2		



Quadratic Equations and Functions: Exploring Graphs of Quadratic Functions

14.1

LINEAR to QUADRATIC

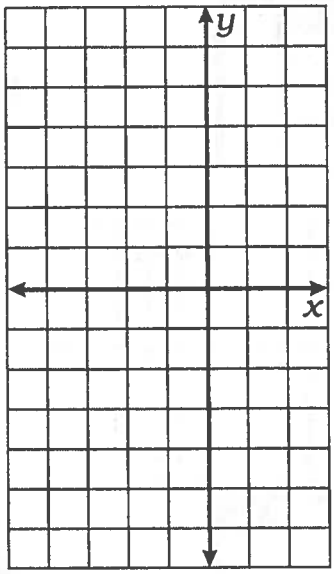
Linear function: $y = mx + b$

Quadratic function: $y = ax^2 + bx + c$

1 For a linear function, if $m = 2$ and $b = 4$, then $y =$

a. Complete the table below, then graph this function.

x	y
0	
1	
−3	



b. For your graph, find:

- The slope of the line.
- The y-intercept.
- The x-intercept.

c. Every point in the _____ represents a _____ of the equation.

2 For a quadratic function, if $a = 1$, $b = 2$, and $c = -5$, then $y =$

a. Complete the table below, then graph this function.

x	y
−4	
−3	
−2	
−1	
0	
1	
2	

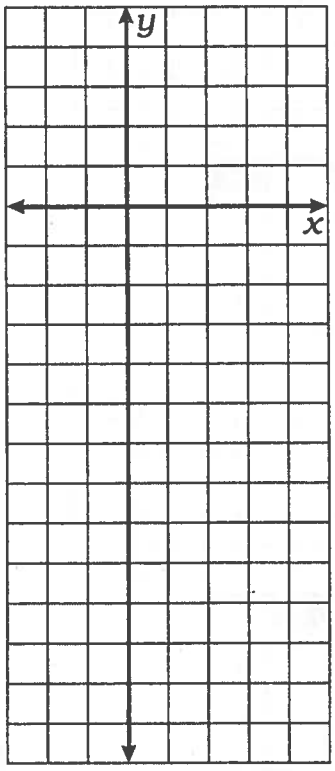
b. If $x = \frac{-b}{2a}$, find x.

c. What is the connection between this value of x and your graph?

3 For a linear function, if $m = \frac{2}{3}$ and $b = -1$, then $y =$

a. Complete the table below, then graph this function.

x	y
0	
3	
−3	



b. For your graph, find:

- The slope of the line.
- The y-intercept.

c. For what value of x does $y = 0$?

4 For a quadratic function, if $a = -2$, $b = 4$, and $c = 3$, then $y =$

a. Complete the table below, then graph this function.

x	y
−2	
−1	
0	
1	
2	
3	
4	

b. *Estimate from the graph:* For what values of x does $y = 0$?