Lesson 12-1

Example 1

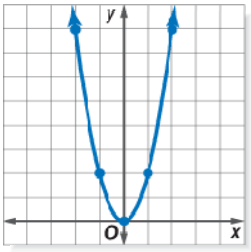
Graph $y = 2x^2$.

Solution

Find at least five ordered pairs by selecting x-values and solving the equation to find y-values.

x	-2	-1	0	1	2
y	8	2	0	2	8

Graph the ordered pairs
Draw a smooth curve through the points.



Example 2

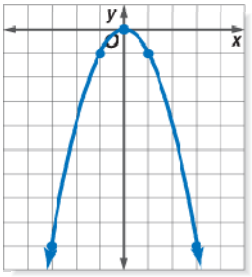
Graph $y = -x^2$.

Solution

Make a table of ordered pairs.

x	-3	-1	0	1	3
y	-9	-1	0	-1	9

Graph the points corresponding to the ordered pairs and draw a smooth curve through them.



Example 3

GEOLOGY The distribution of a trace element within a geologic sample can be modeled by the equation $y = 2x^2 - 3$. Graph and locate the vertex of the parabola.

Solution

Make a table of ordered pairs.

x	-2	-1	0	1	2
y	5	-1	-3	-1	5

Graph the points and draw a smooth curve. Look for a *y*-value that has only one *x*-value. The vertex is (0, -3).