10-1 Introduction to Conic Sections

To graph any relation, you can begin by plotting a few points. Recall that not all graphs represent functions.

1. Complete the table for the equation $x^2 + y^2 = 25$. Be sure to find all the *y*-values for each *x*-value.

x	−5	−4	−3	0	3	4	5
y							

2. Plot the points and graph the relation.

3. What type of shape is the graph?

4. Complete the table for the equation $4x^2 + 9y^2 = 36$. Be sure to find all the *y*-values for each *x*-value. Round your answers to the nearest tenth if necessary.

x	−3	−2	−1	0	1	2	3
y							

5. Plot the points and graph the relation.

THINK AND DISCUSS

6. Describe the graph of $4x^2 + 9y^2 = 36$. How is it different from the graph of $x^2 + y^2 = 25$?

7. Explain whether the relations that you graphed are functions.

Holt Algebra 2

10-1 Introduction to Conic Sections

To graph any relation, you can begin by plotting a few points. Recall that not all graphs represent functions.

1. Complete the table for the equation $x^2 + y^2 = 25$. Be sure to find all the y-values for each x-value.

x	-5	-4	-3	0	3	4	5
y	0	±3	±4	±5	±4	±3	0

2. Plot the points and graph the relation.

3. What type of shape is the graph?   circle

4. Complete the table for the equation $4x^2 + 9y^2 = 36$. Be sure to find all the y-values for each x-value. Round your answers to the nearest tenth if necessary.
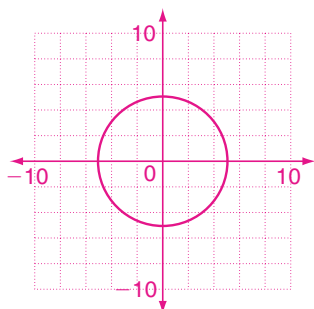
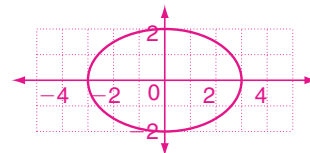| x	-3	-2	-1	0	1	2	3
y	0	±1.5	±1.9	±2	±1.9	±1.5	0

5. Plot the points and graph the relation.

THINK AND DISCUSS

6. Describe the graph of $4x^2 + 9y^2 = 36$. How is it different from the graph of $x^2 + y^2 = 25$?   The graph of $4x^2 + 9y^2 = 36$ is an ellipse, whereas the graph of $x^2 + y^2 = 25$ is a circle.

7. Explain whether the relations that you graphed are functions.

2.

5.

7. No; they fail the vertical line test.

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