**Identifying Conics Practice**

1. Identify the following as CONIC or NON-CONIC. If, in fact, an equation is a conic, identify which type of conic it is (circle, ellipse, hyperbola, parabola).

a.

b.

c.

d.

e.

f.

g.

h.

2. Given the following conditions upon the equation , which conic is represented?

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

3. With respect to the general conic equation , in each of the following, determine the restriction upon the given variables in order for the desired result to be true:

a. A circle with its centre in Quadrant II; only.

b. An ellipse with its major axis on the -axis. only.

c. A parabola that opens down with an axis of symmetry *not* on the -axis. only.

d. A hyperbola with its transverse axis on the -axis. only.

Multiple-Choice Questions

4. Which conic is described by the equation ?

a. hyperbola b. ellipse c. parabola d. circle

5. For which value of constant will the equation represent an ellipse?

a. b. c. d.

6. Which conic is represented by the equation if and ?

a. circle b. parabola c. ellipse d. hyperbola

7. What condition must be satisfied if the ellipse , with , and where the major axis is on the -axis?

a. b. c. d.

8. If is a hyperbola, determine values for and such that the hyperbola has its vertices on the -axis.

a. b. c. d.

9. Determine the values of the constants and so that the equation

represents a parabola with a horizontal axis of symmetry.

a. b.

c. d.

10. Determine restrictions on the constants such that represents a parabola that opens down.

a. b. c. d.

11. Determine restriction on the constants such that represents a parabola that has its vertex on the -axis and opens *down*.

a. b.

c. d.

12. Determine the best answer for such that is an ellipse.

a. b. c. d.

**Solutions**

1. a. circle b. hyperbola c. ellipse d. parabola e. non-conic (line)

f. hyperbola g. non-conic (point) h. non-conic (intersecting lines)

2. a. circle b. ellipse c. parabola d. hyperbola e. hyperbola

f. circle g. ellipse h. hyperbola i. parabola j. ellipse

3. a. b.

c. d.

4. d 5. d 6. d 7. c 8. b 9. a 10. b 11. a 12. c