

INTRODUCTION TO CONIC SECTIONS

Show all work neatly on your own paper and graph paper.

Identify the conic section and sketch it.

1) $9x^2 + 4y^2 = 36$

1) _____

2) $4x^2 - 25y^2 = 100$

2) _____

3) $-x^2 + 16y^2 = 64$

3) _____

4) $x^2 + y^2 = 49$

4) _____

5) $y = 2x^2$

5) _____

6) $x = (-1/3)y^2$

6) _____

7) $3x^2 + 7y^2 = 71$

7) _____

8) *Critical Points for Ellipses or Circles.* The equation for an ellipse or circle can be transformed to $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$. From what you have observed about the graphs of ellipses and circles, write a conclusion

about the effects of the constants a and b on the graph.

9) *Critical Points for Hyperbolas.* The equation for a hyperbola can be transformed to $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ or $-\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

From what you have observed about the graphs of hyperbolas, write a conclusion about the effects of the constants a and b on the graph.

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