

Unit 1 Quiz 2: Conics (through Hyperbolas) – A

Name: _____ Date: _____ Period: _____

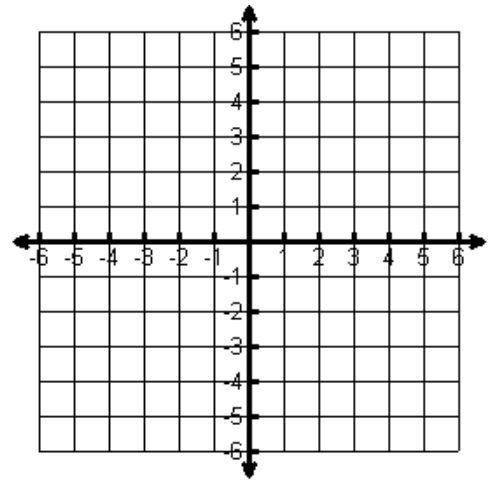
***Show and label all work. Do NOT use a calculator. Quiz is worth 50 points.*

1.) (25 points)

- (a) Re-write the following relation in standard form.
- (b) Graph the relation
- (c)–(h) Determine the requested characteristics.

$$4x^2 - y^2 + 24x + 4y + 28 = 0$$

b. Graph:



a. Standard Form: _____

b. Center: _____ (_____ , _____) _____

c. Orientation: _____

d. Length of Transverse Axis: _____

e. Length of Conjugate Axis: _____

f. Vertices: _____ (_____ , _____) _____ (_____ , _____) _____

g. Foci: _____ (_____ , _____) _____ (_____ , _____) _____

h. Asymptote Equations: _____

- 2.) (10 points) Write the standard form equation of the hyperbola with foci at $(-1, -2 \pm 2\sqrt{5})$ and conjugate axis of length 8 units.

Standard Form: _____

- 3.) (15 points) Consider the ellipse represented by $4x^2 + 9y^2 - 24x + 18y + 9 = 0$

a.) Standard Form: _____

b.) Center: _____ (_____ , _____) _____

c.) Orientation: _____

d.) Vertices (on major axis): _____ (_____ , _____) _____ (_____ , _____) _____

e.) Foci: _____ (_____ , _____) _____ (_____ , _____) _____

****EXTRA CREDIT****

- A.) (2 points) Write the equation of a circle with center (2,7) and diameter 30.

Equation: _____

- B.) (3 points) Find the coordinates of the vertex and the equation of the axis of symmetry for the parabola represented by $-2x + y^2 - 2y + 5 = 0$

Vertex: _____

Axis of Symmetry: _____