

Math 3330 - Quiz 3

Name: _____

1. Graph the following conic sections.

(a) $\frac{x^2}{4} + y^2 = 1$

(b) $\frac{x^2}{4} - \frac{y^2}{9} = 16$

(c) $\frac{x^2}{4} + y = 1$

(d) $y^2 + 2y + 12x + 25 = 0$

(e) $r = 4 \cos(\theta)$ Given in polar.

(f) $r = 2 \tan(\theta) \sec(\theta)$ Given in polar, however it may be easier to convert to Cartesian before graphing.

(g) $x = 2 \cos(t)$ and $y = -4 \sin(t)$. Given as a parametric equation.

2. Find an equation to express the conic section described below.

(a) a parabola with vertex $(0, 2)$ and symmetric about the y -axis.

(b) a parabola with vertex $(0, 0)$ and symmetric about the x -axis, and the graph is only in the second and third quadrants.

(c) an ellipse with center $(0, 2)$, major axes (along the x -axis) of 6 units and a minor axis of 4 units.

(d) an ellipse with foci $(\pm 4, 0)$ and going through the point $(0, 2)$.

12.1: 13, 15, 23, 31, 33

12.2: 9, 23, 32