

Conics Test 50

1) Identify the following as a; circle (c), parabola (p), ellipse (e), hyperbola (h), or, a pair of straight lines (l).

a) $5x^2 + 10x + 5y^2 - 20y - 75 = 0$

b) $(x + 5)(x - 3) = y$

c) $x^2 - y^2 = 0$

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

e) $2x^2 + 8x = 10y - 5y^2$

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

g) $3x^2 + 3y^2 - 9 = 0$

2) Convert to general form.

a) $\frac{x^2}{16} + \frac{y^2}{9} = 1$

b) $y = \frac{1}{2}(x - 4)^2$

c) $(x - 3)^2 + (y + 2)^2 = 9$

d) $\frac{(y - 1)^2}{16} - \frac{(x + 3)^2}{1} = 1$

3) Convert to standard form.

a) $x^2 + y^2 - 10y - 75 = 0$

b) $16x^2 + 96x - y^2 + 128 = 0$

c) $y^2 + 4y + 2x - 4 = 0$

d) $9x^2 - 36x + 16y^2 + 32y - 92 = 0$

4) Graph the following.

a) $y = (x + 5)^2$

b) $x^2 + (y + 3)^2 = 4$

c) $\frac{(x - 1)^2}{9} + \frac{(y - 5)^2}{4} = 1$

d) $\frac{x^2}{4} - \frac{y^2}{9} = 1$

5)a) Find the vertex of the parabola with the equation;

$$x^2 + 10x + y + 28 = 0$$

b) Find the center of the circle with the equation;

$$x^2 + y^2 - 6y = 0$$

c) Find the equation of one of the asymptotes of the hyperbola with the equation;

$$4x^2 - y^2 = 4$$

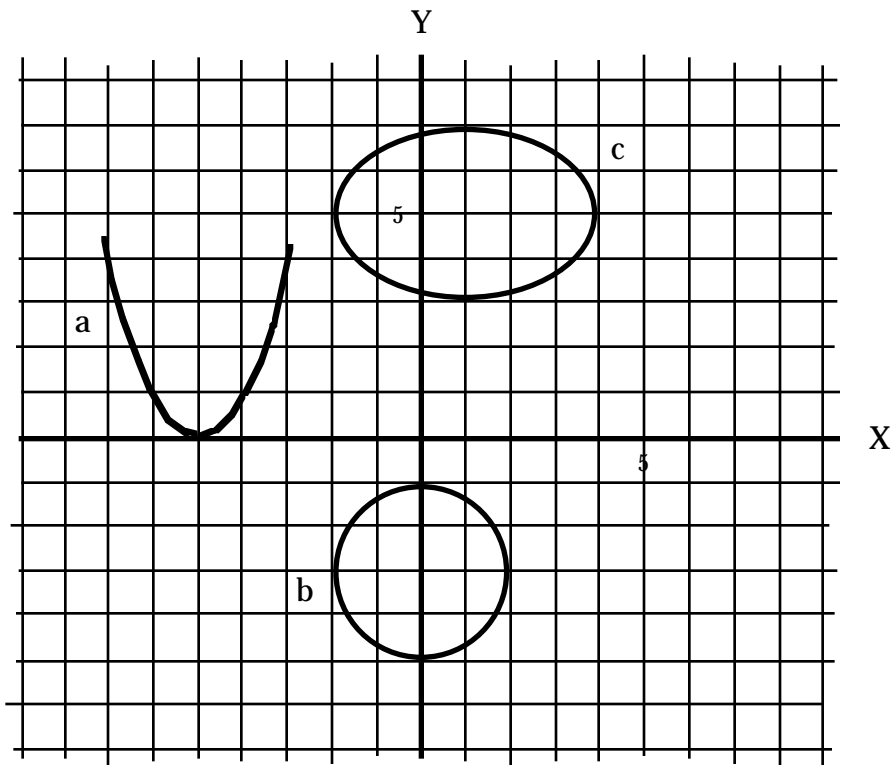
Answers: 1)a) c, b) p, c) l, d) h, e) e, f) e, g) c,

2)a) $9x^2 + 16y^2 - 144 = 0$, b) $x^2 - 8x - 2y + 16 = 0$,

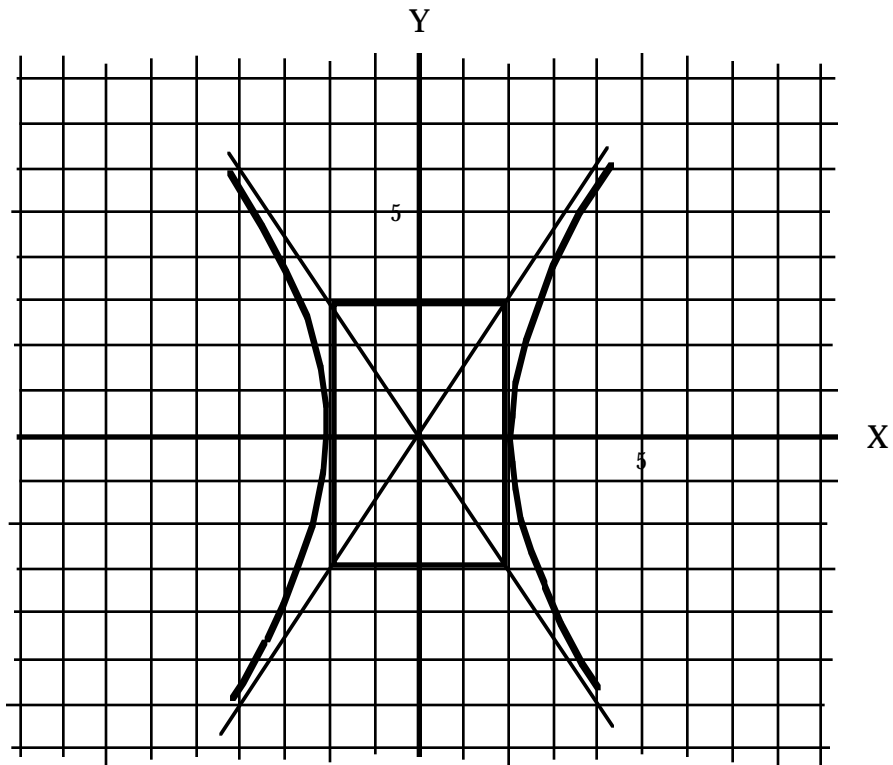
c) $x^2 + y^2 - 6x + 4y + 4 = 0$, d) $16x^2 - y^2 + 96x + 2y + 159 = 0$,

3)a) $x^2 + (y - 5)^2 = 100$, b) $\frac{(x + 3)^2}{1} - \frac{y^2}{16} = 1$, c) $(y + 2)^2 = -2(x - 4)$,

d) $\frac{(x - 2)^2}{16} + \frac{(y + 1)^2}{9} = 1$, 4)a), b), c),



4)d)



5)a) (-5, -3), b) (0, 3), c) $y = \pm 2x$.