Review Assorted Conics 2   Name _____
Circles, Ellipses, Hyperbolas & Parabolas

1. Graph and provide the requested information:
   Circles: Center, Radius
   Ellipses: Center, Vertices, Co-vertices, foci, major and minor axis length
   Hyperbolas: Center, Vertices, Foci, and Asymptotes
   Parabolas: Vertex, Focus, Directrix, End Points of Latus Rectum

a. $(x+1)^2 + (y-3)^2 = 10$ b. $\dfrac{(x-2)^2}{9} + \dfrac{y^2}{25} = 1$ c. $16x^2 - 9y^2 = 144$

d. $\dfrac{(y-2)^2}{25} - \dfrac{(x+3)^2}{4} = 1$ e. $(x+4) + (y-2)^2 = 0$ f. $4(y-1)^2 = 16(x-5)$

2. Name the conic and write it in standard form:

   a. $x^2 + y^2 - 6x - 2y + 1 = 0$

   b. $6x^2 - 12 = 6y^2$

   c. $9x^2 + 4y^2 + 54x - 16y + 61 = 0$

   d. $9x^2 - 4y^2 + 36x - 8y - 40 = 0$

   e. $x^2 + x - y = 5$

3. Write the standard form of the given conic using the given information:

   a. circle with center (−2, 3) and diameter 8

   b. horizontal ellipse with center at (3, −4); major axis length 8; minor axis length 4

c. circle with center (1, 4) and passes through (2, −1)

d. hyperbola with vertices (1, 2) and (5, 2) and the slope of one asymptote is $\dfrac{3}{2}$

e. ellipse with vertices at (2, 1) and (6, 1); co-vertices at (4, 2) and (4, 0)

f. hyperbola with vertices $(0, \pm 2)$ and foci $(0, \pm 4)$

g. parabola with focus (5, 5), directrix: $y = -3$

h. parabola with vertex (2, -1), passes through (4, 2), $p > 0$, axis of symmetry: $x = 2$

4. Solve the systems of equations by graphing.

a. $x^2 + y^2 = 16$

$x - y = 4$

b. $(x + 1)^2 + (y - 3)^2 = 1$

$x^2 + y^2 - 4x - 5 = 0$

c. $(x + 1)^2 + (y - 1)^2 = 1$

$(x - 2)^2 + (y - 1)^2 = 4$

5. Solve the systems algebraically.

a. $x^2 + y^2 = 5$

$y = -x + 3$

b. $x^2 + y^2 = 9$

$x^2 + y^2 - 4x + 3 = 0$

c. $4x^2 + 9y^2 - 36y = 0$

$x^2 + 9y - 27 = 0$