Math Analysis Honors -Worksheet 63   **Conic Sections: Ellipses**

Sketch the ellipse. Label the center, vertices, foci, and eccentricity of the ellipse.

1	$\dfrac{x^2}{64} + \dfrac{y^2}{9} = 1$
2	$\dfrac{(x+3)^2}{9} + \dfrac{(y-2)^2}{16} = 1$

Find the standard form of the equation of the ellipse. Find the center, vertices, foci, and eccentricity of the ellipse.

3	Vertices: $(0, \pm 8)$; foci: $(0, \pm 4)$
4	Foci: $(\pm 2, 0)$; major axis of length 12
5	Vertical major axis; passes through points $(0,4)$ and $(2,0)$
6	Center: $(2,-1)$; vertex: $\left(2, \dfrac{1}{2}\right)$; minor axis of length 2
7	Center: $(3,2)$; $a = 3c$; foci: $(1,2),(5,2)$
8	Vertices: $(3,1)$ and $(3,9)$; minor axis of length 6

Classify the graph of the equation as a circle, parabola or an ellipse.

9	$3x^2 + 2y^2 - 12x + 12y + 29 = 0$
10	$4x^2 + 4y^2 - 4x + 8y - 11 = 0$
11	$-4y^2 + 5x + 3y + 7 = 0$

Answers

1)	2)	3) $\dfrac{x^2}{48} + \dfrac{y^2}{64} = 1$
4) $\dfrac{x^2}{36} + \dfrac{y^2}{32} = 1$	5) $\dfrac{x^2}{4} + \dfrac{y^2}{16} = 1$	6) $(x-2)^2 + \dfrac{(y+1)^2}{9/4} = 1$
7) $\dfrac{(x-3)^2}{36} + \dfrac{(y-2)^2}{32} = 1$	8) $\dfrac{(x-3)^2}{9} + \dfrac{(y-5)^2}{16} = 1$	9) Ellipse
10) Circle	11) Parabola	