

9.2 Ellipses

9) b 10) a 11) c 12) d

$$14) \frac{x^2}{4} + \frac{y^2}{9/4} = 1$$

$$17) \frac{x^2}{24} + \frac{y^2}{49} = 1$$

$$19) \frac{5x^2}{48} + \frac{y^2}{16} = 1$$

$$21) \frac{(x-2)^2}{4} + \frac{(y+1)^2}{1} = 1$$

$$24) \frac{(x-3)^2}{9} + \frac{(y-5)^2}{16} = 1$$

$$26) \frac{(x-2)^2}{9} + \frac{y^2}{5} = 1$$

31) Center (4, -1)
 V: (4, 4) & (4, -6)
 f: (4, 2) & (4, -4)
 e = 3/5

32) C: (-3, 2)
 V: (-3, 6) & (-3, -2)
 CV: (-3 ± 2√3, 2)
 f: (-3, 4) & (-3, 0)
 e = 1/2

$$39) \frac{(x+2)^2}{4} + \frac{(y-3)^2}{9} = 1$$

a = 3 b = 2 c = √5

C: (-2, 3)

f: (-2, 3 ± √5)

CV: (-4, 3) & (0, 3)

e = √5/3

50) V: (0, 8) & (0, -8)

h = 0, k = 0

C: (0, 0) ✓

e = 1/2 = c/a

★ 1/2 = c/8

★ c = 4, a = 8, b = ?

16 = 64 - b²
 b² = 48

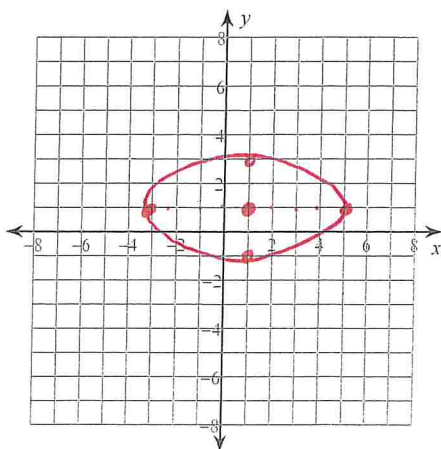
$$\boxed{\frac{x^2}{48} + \frac{y^2}{64} = 1}$$

Focus - Ellipse

Date _____ Period _____

Identify the center, vertices, co-vertices, foci, and eccentricity of each. Then sketch the graph.

1) $x^2 + 4y^2 - 2x - 8y - 11 = 0$



$$(x^2 - 2x + 1) + 4(y^2 - 2y + 1) = 11 + 1 + 4$$

$$\frac{(x-1)^2}{16} + \frac{4(y-1)^2}{16} = \frac{16}{16}$$

$$\frac{(x-1)^2}{16} + \frac{(y-1)^2}{4} = 1$$

$$\begin{aligned} a &= 4 \\ b &= 2 \\ c &= \sqrt{a^2 - b^2} = 2\sqrt{3} \end{aligned}$$

C: (1, 1)

V: (5, 1) & (-3, 1)

CV: (1, 3) (1, -1)

foci: $(1 \pm 2\sqrt{3}, 1)$

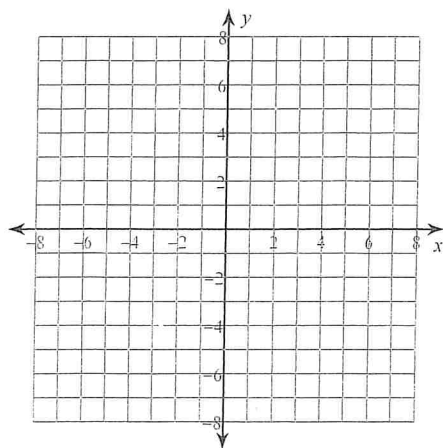
$e = \frac{2\sqrt{3}}{4} \approx .866$

Focus - Circles

Date _____ Period _____

Identify the center and radius of each. Then sketch the graph.

1) $x^2 + y^2 + 8x - 4y + 13 = 0$



Use the information provided to write the standard form equation of each circle.

2) Center: (6, 7)

Point on Circle: (8, 1)