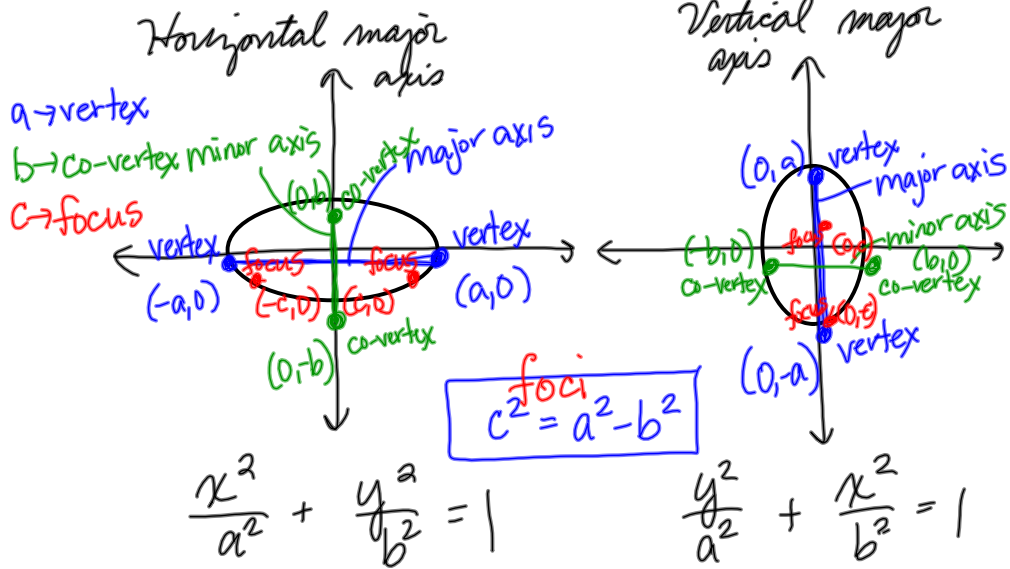
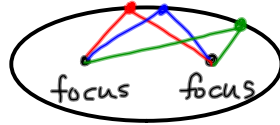


Sec. 8.4 Graph and Write Equations of Ellipses

ellipse



Graph. Then identify the vertices, co-vertices, and foci of the ellipse.

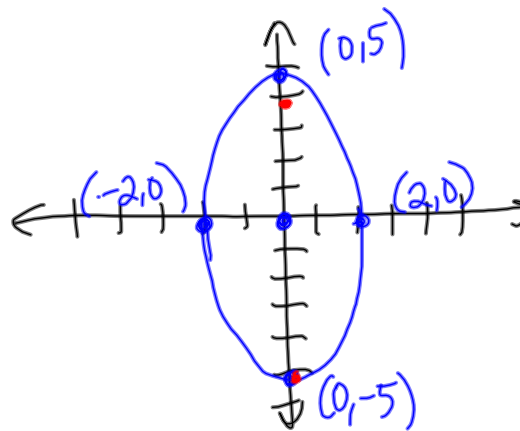
a. $\frac{25x^2}{100} + \frac{4y^2}{100} = \frac{100}{100}$

$\frac{x^2}{4} + \frac{y^2}{25} = 1$

take square root
 $c: (0, 0)$

v: $(0, -5), (0, 5)$
 c-v: $(-2, 0), (2, 0)$

f: $c^2 = a^2 - b^2$
 $c^2 = 25 - 4$ $(0, -\sqrt{21}), (0, \sqrt{21})$
 $c^2 = 21$

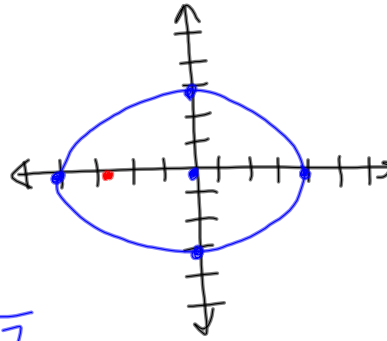


b. $\frac{x^2}{16} + \frac{y^2}{9} = 1$

$a=4$
 $b=3$
 $c: (0,0)$

$v: (\pm 4, 0)$
 $c-v: (0, \pm 3)$
 $f: (\pm\sqrt{7}, 0)$

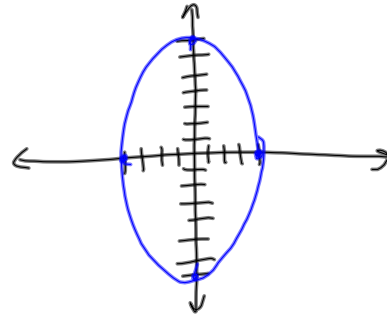
$c^2 = a^2 - b^2$
 $c^2 = 16 - 9$
 $c^2 = 7$
 $c = \pm\sqrt{7}$



Write an equation of the ellipse:

a. $v: (0, \pm 7) \rightarrow a$
 $c-v: (\pm 4, 0) \rightarrow b$
 $c: (0,0)$

$\frac{x^2}{16} + \frac{y^2}{49} = 1$



b. $v: (0, 10)$
 $f: (0, 8)$

$c^2 = a^2 - b^2$
 $64 = 100 - b^2$
 $-100 \quad -100$

 $-36 = -b^2$
 $36 = b^2$

p. 513 (3-47) eoo

c. $v: (-5, 0)$
 $f: (3, 0)$

$\frac{x^2}{25} + \frac{y^2}{16} = 1$

$-16 = -b^2$
 $16 = b^2$

p. 513 (3-47) eoo