

# 9 CHAPTER REVIEW

## TOPIC LIST:

9.1/9.3

↳ dist/midpoint

↳ circles (graph/find eq's)

9.2

↳ parabolas (graph/find eq's)

↳ vertex:  $(0,0)$

↳ focus:  $(p,0)$  or  $(0,p)$

↳ directrix:  $x=-p$  or  $y=-p$

↳ axis of sym:  $x$ -axis or  $y$ -axis

9.4

↳ Ellipses (graph/find eq's)

↳  $V: (\pm a, 0)$  or  $(0, \pm a)$

↳  $cv: (0, \pm b)$  or  $(\pm b, 0)$

↳  $f: (\pm c, 0)$  or  $(0, \pm c)$

9.5

↳ hyperbolas

↳  $V: (\pm a, 0)$  or  $(0, \pm a)$

↳  $f: (\pm c, 0)$  or  $(0, \pm c)$

↳ make your box

↳ draw your asymptotes

↳ find  $y = \pm \frac{b}{a}x$   
or  
 $y = \pm \frac{a}{b}x$

9.6 wks

↳ translated & Identified

9.7 wks

↳ solve systems (sub or elim)

**9.1 Apply the Distance and Midpoint Formulas**

Find the distance between the two points. Then find the midpoint of the line segment joining the two points.

5.  $(-6, -5), (2, -3)$

$$d = \sqrt{(2 - (-6))^2 + (-3 - (-5))^2}$$

$$= \sqrt{8^2 + 2^2}$$

$$= \sqrt{64 + 4}$$

$$= \sqrt{68}$$

$$\sqrt{4} \sqrt{17}$$

$$2\sqrt{17}$$

$$M = \left( \frac{-6 + 2}{2}, \frac{-5 + (-3)}{2} \right)$$

$$= \left( \frac{-4}{2}, \frac{-8}{2} \right)$$

$$M = (-2, -4)$$

**9.2** Graph and Write Equations of Parabolas

a)  $x^2 = 16y$

$V: (0, 0)$

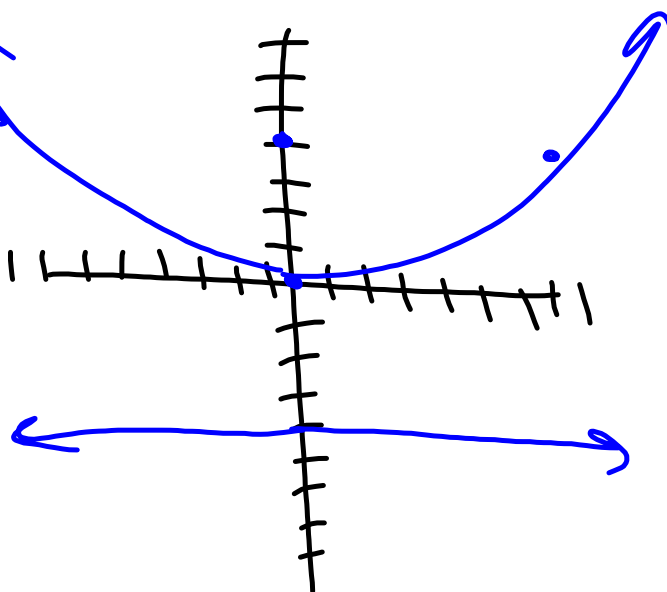
$$\frac{4p}{4} = \frac{16}{4}$$

$p = 4$

$f: (0, 4)$

$d: y = -4$

a of s: y-axis



## 9.4 Graph and Write Equations of Ellipses

$$21) \quad \frac{16x^2}{400} + \frac{25y^2}{400} = \frac{400}{400}$$

$$a = 5 \quad \frac{x^2}{25} + \frac{y^2}{16} = 1$$

$$c: (0, 0)$$

$$v: (\pm 5, 0)$$

$$cv: (0, \pm 4)$$

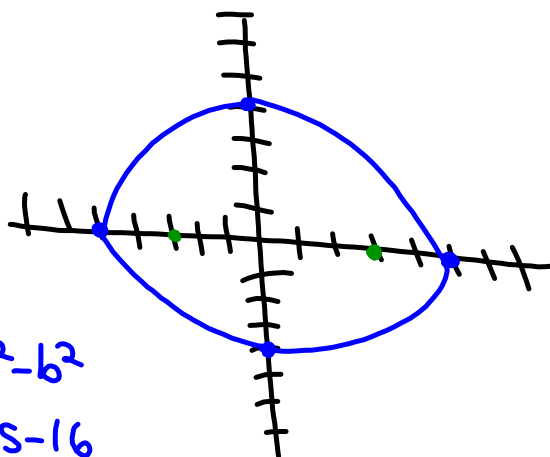
$$f: (\pm 3, 0)$$

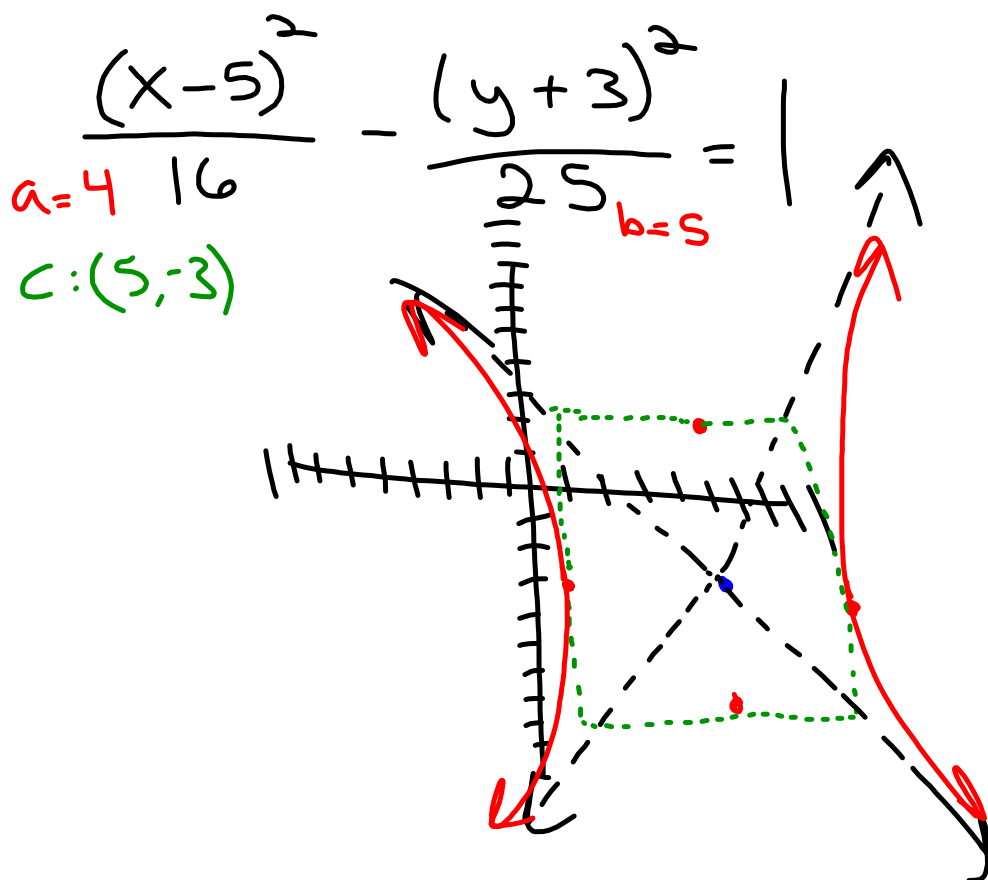
$$c^2 = a^2 - b^2$$

$$c^2 = 25 - 16$$

$$\sqrt{c^2} = \sqrt{9}$$

$$c = \pm 3$$



**9.5** Graph and Write Equations of Hyperbolas

## 9.5 Graph and Write Equations of Hyperbolas

2 a) hyperbola

$$f: (0, \pm 5)$$

$$v: (0, \pm 2)$$

$$c: (0, 0)$$

$$c=5$$

$$a=2$$

$$\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1$$

$$c^2 = a^2 + b^2$$

$$5^2 = 2^2 + b^2$$

$$25 = 4 + b^2$$

$$21 = b^2$$

$$\frac{y^2}{25} - \frac{x^2}{21} = 1$$

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