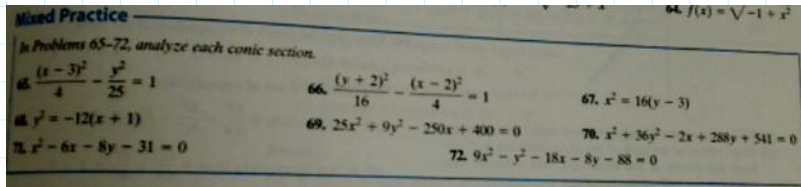


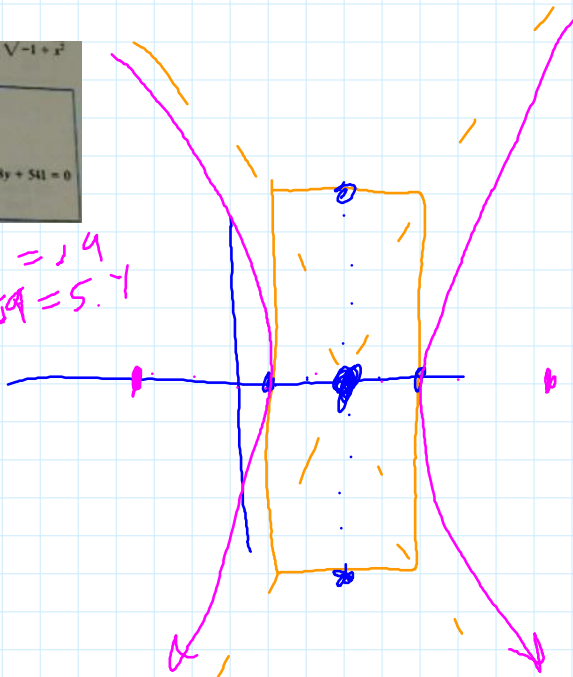
10.2-10.4 Review Problems

Thursday, April 29, 2010  
12:31 PM



#1 
$$\frac{(x-3)^2}{4} - \frac{y^2}{25} = 1$$

$$c = 4 + 25 = 29$$
  
$$c = \sqrt{29} = 5.4$$



$$9x^2 - y^2 - 18x - 8y - 88 = 0$$

$$25x^2 + 9y^2 - 250x + 400 = 0$$

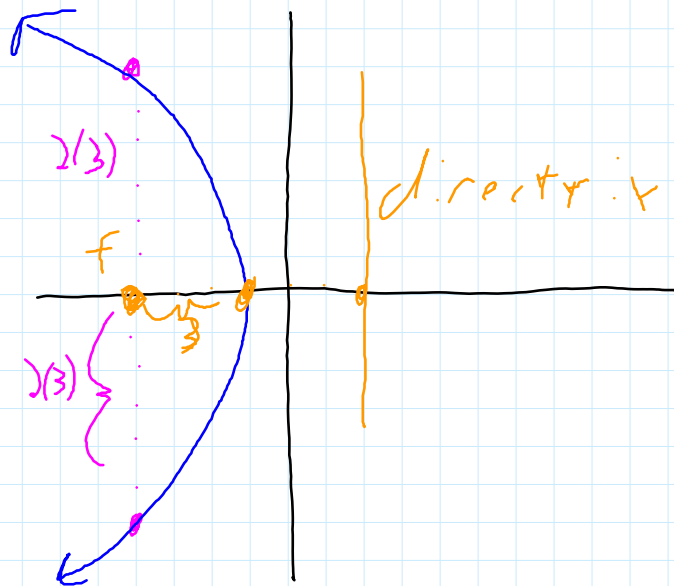
$$y^2 = -12(x+1)$$

$$y^2 = -4a(x)$$

$$y^2 = -4(3)(x+1)$$

$$a = 3$$

vertex: (-1, 0)



2) 
$$9x^2 - y^2 - 18x - 8y - 88 = 0$$

$$9x^2 - 18x - y^2 - 8y = 88$$

$$9(x^2 - 2x + 1) - (y^2 + 8y + 16) = 88 + 9 - 16$$

$$\frac{9(x-1)^2}{9} - \frac{(y+4)^2}{81} = 81$$

Center: (1, -4)

$$a = 3$$

$$b = 9$$

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

$$c^2 = 9 + 81 = 90$$

$$25x^2 + 9y^2 - 250x + 400 = 0$$

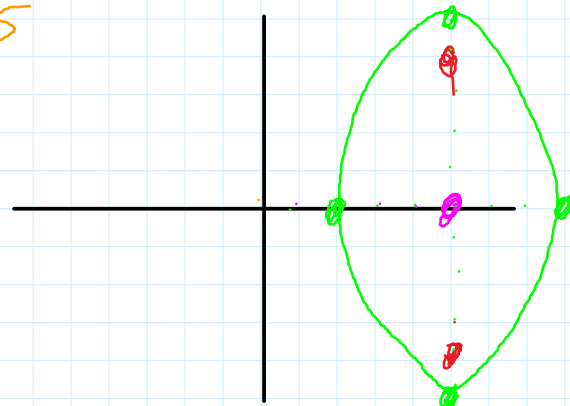
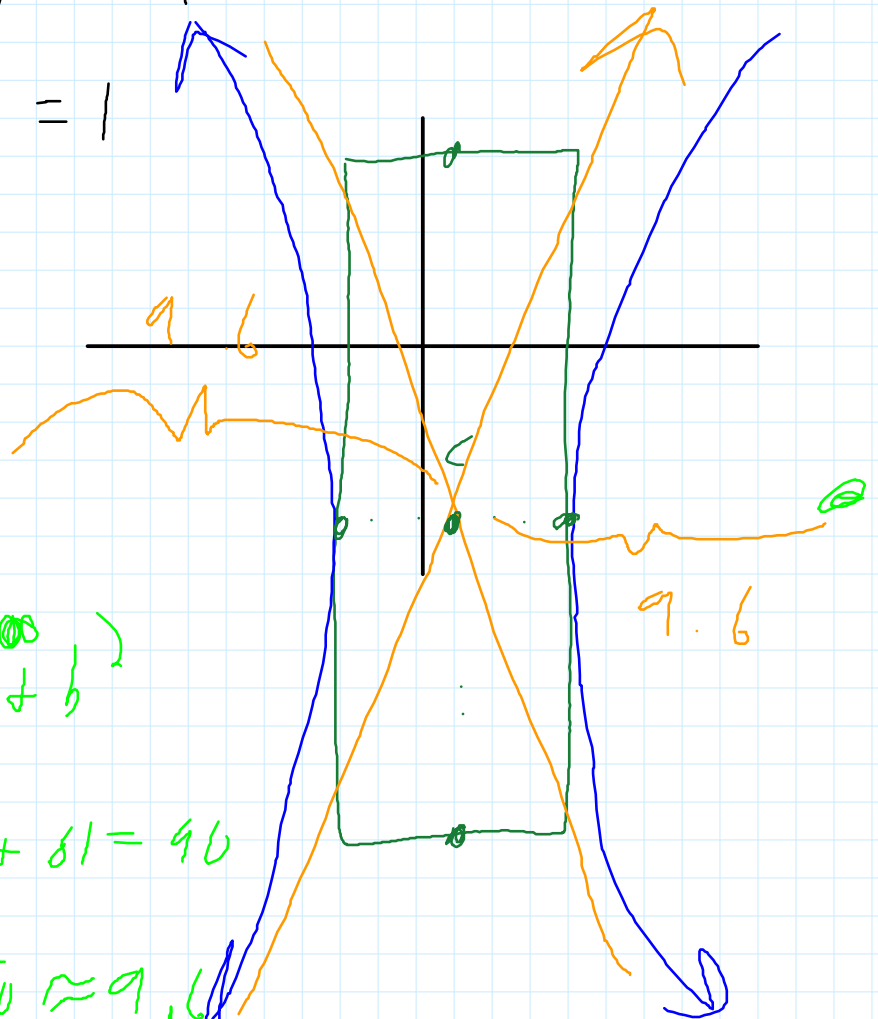
$$25x^2 - 250x + 9y^2 = -400$$

$$25(x^2 - 10x) + 9y^2 = -400$$

$$25(x^2 - 10x + 25) + 9y^2 = -400 + 625$$

$$25(x-5)^2 + 9y^2 = 225$$

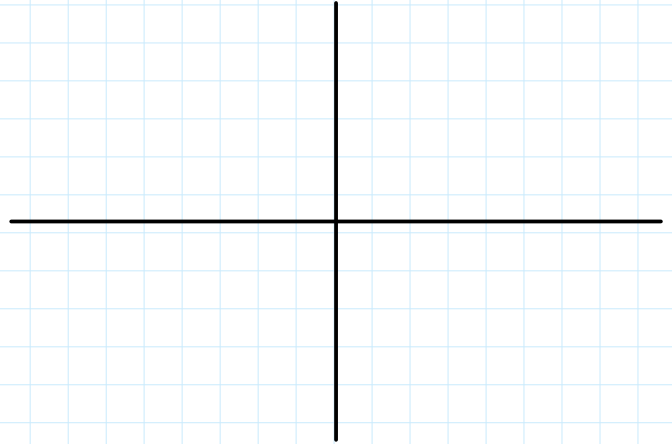
$$\frac{(x-5)^2}{9} + \frac{y^2}{25} = 1$$



(center:  $(5, 0)$ )

$$\text{foci: } c^2 = a^2 - b^2 = 25 - 9 = 16 \quad c = 4$$

$$y^2 = -12(x+1)$$



Page 701: 7-31 odd

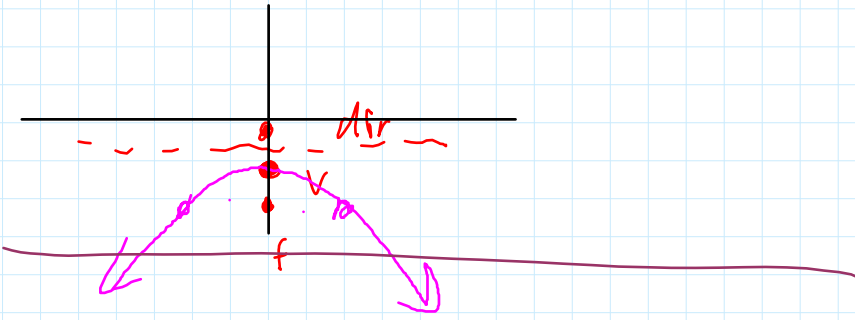
$$\rightarrow) \quad x^2 + 4y = 4$$

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

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

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

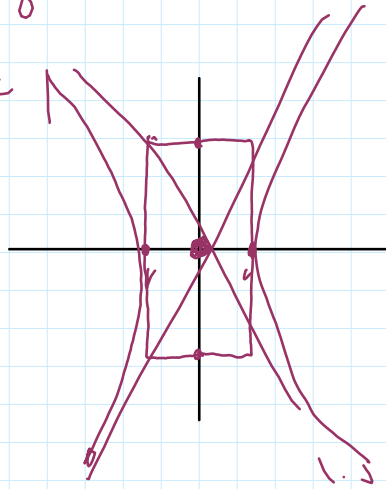
$$X = -4 \cdot (Y - 1)$$



$$9) \quad \frac{4x^2}{2} - \frac{y^2}{8} = 1$$

$$a = \sqrt{2} \approx 1.4$$

$$b = \sqrt{8} \approx 2.8$$



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

$$c^2 = 10$$

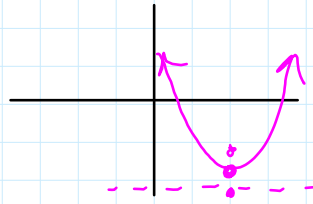
$$c \approx \sqrt{10}$$

$$11) \quad X^2 - 4X + \dots = 2Y$$

$$X^2 - 4X + 4 = 2Y + 4$$

$$(X-2)^2 = 2(Y+2)$$

$$(X-2)^2 = 4 \cdot \frac{1}{2} (Y+2)$$



$$13) \quad Y^2 - 4Y + 4X^2 + 8X = 4$$

$$y^2 - 4y + \underline{+4} + -4x^2 + 8x + \underline{\quad} = 4 + 4$$

$$(y-2)^2 + -4(x^2 - 2x + \underline{+1}) = 8 + 4$$

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

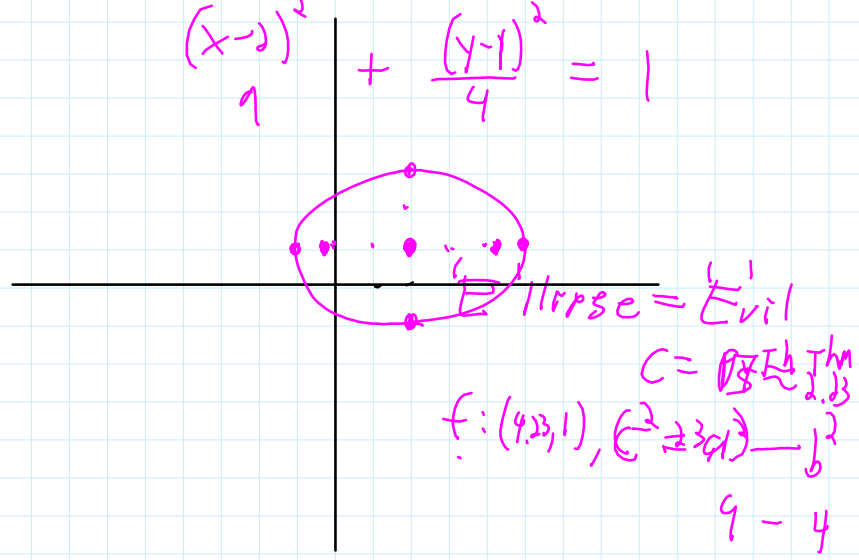
$$\frac{(y-2)^2}{4} - \frac{(x-1)^2}{1} = 1$$

15)  $4x^2 - 16x + 9y^2 - 18y = 11$

$$4(x^2 - 4x + \underline{4}) + 9(y^2 - 2y + \underline{1}) = 11 + 16 + 9$$

$$4(x-2)^2 + 9(y-1)^2 = 36$$

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



17)  $4x^2 - 16x + 16y + 32 = 0$

17)

$$9x^2 - 18x + 4y^2 + 8y = 23$$

$$9(x^2 - 2x + 1) + 4(y^2 + 2y + 1) = 23$$

$$9(x-1)^2 + 4(y+1)^2 = 36$$

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