

MAC1140 SEC29 Quiz 10-17-2007 9.3 9.4

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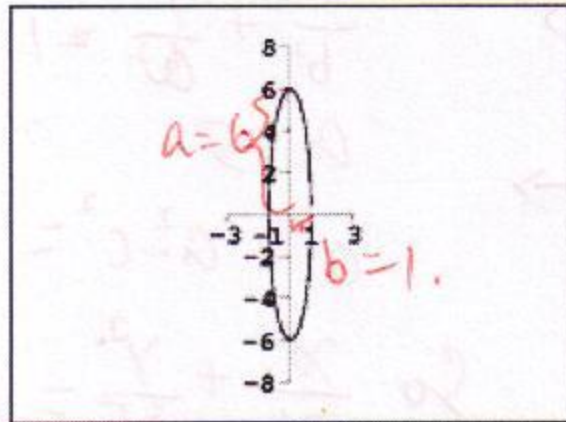
Full Name:

Fei Hua

Sec#:

Date:

[9.3.1bPT] Select the equation of the following graph.



Thin

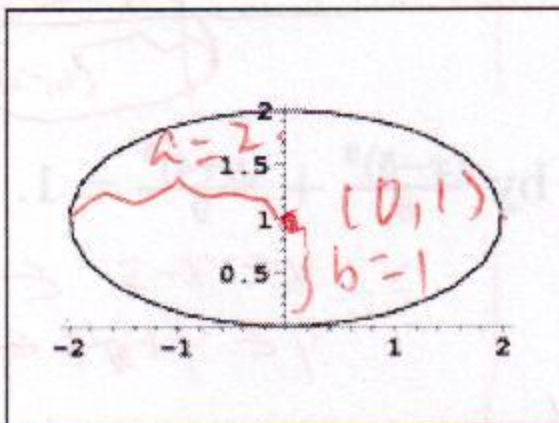
$$\frac{x^2}{b^2} + \frac{y^2}{a^2} = 1$$

$$\frac{x^2}{1} + \frac{y^2}{36} = 1$$

- 1.
- $\frac{x^2}{4} + \frac{y^2}{36} = 1$
  - $\frac{x^2}{1} + \frac{y^2}{36} = 1$
  - $\frac{x^2}{36} + \frac{y^2}{4} = 1$
  - $\frac{x^2}{36} + \frac{y^2}{1} = 1$

2.

[9.3.1cPT] Select the equation of the following graph.



1. Fundamental

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

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

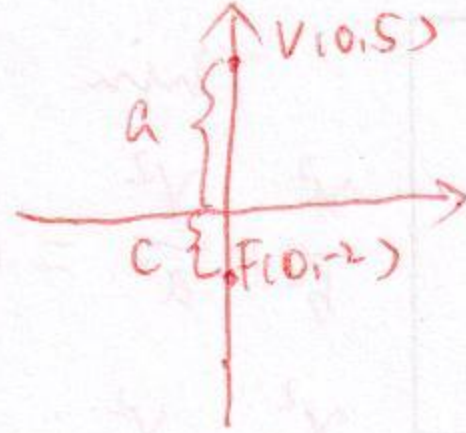
2. V(0,1). - up by 1.  $\Leftrightarrow Y = Y - 1$

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

3.

[9.3.2aPT] Select the equation of the ellipse with center at (0,0), focus at (0, -2), and vertex at (0, 5). *on y-axis!*

- $\frac{x^2}{25} + \frac{y^2}{4} = 1$
- $\frac{x^2}{25} + \frac{y^2}{21} = 1$
- $\frac{x^2}{4} + \frac{y^2}{25} = 1$
- $\frac{x^2}{21} + \frac{y^2}{25} = 1$



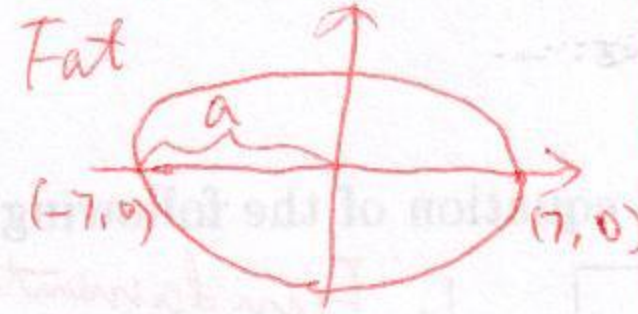
$\frac{x^2}{b^2} + \frac{y^2}{a^2} = 1$   
 $a = 5$   
 $b^2 = a^2 - c^2 = 25 - 4 = 21$   
 So  $\frac{x^2}{21} + \frac{y^2}{25} = 1$

4.

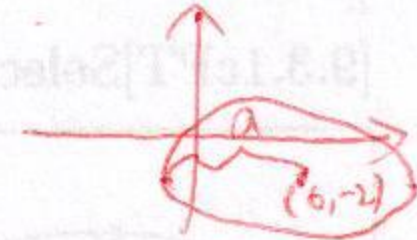
[9.3.3aPT] Find the vertices of the ellipse given by  $\frac{(x-6)^2}{49} + \frac{(y+2)^2}{24} = 1$ .

- (6, -2 ± 7)
- (6 ± 5, -2)
- (6, -2, ±5)
- (6 ± 7, -2)

1. Fundamental  
 $\frac{x^2}{49} + \frac{y^2}{24} = 1$



$x \leftarrow x-6 \leftrightarrow$  right 6  
 $y \leftarrow y+2 \leftrightarrow$  down 2.  
 New center (6, -2).  
 New V (6 ± 7, -2).

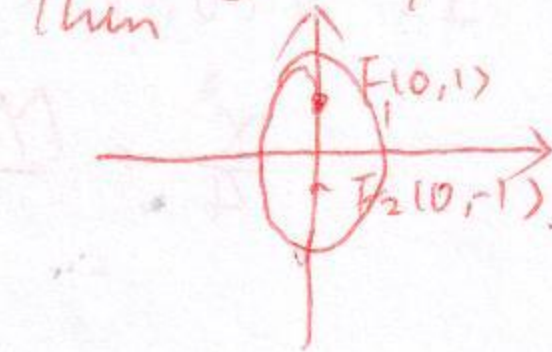


5.

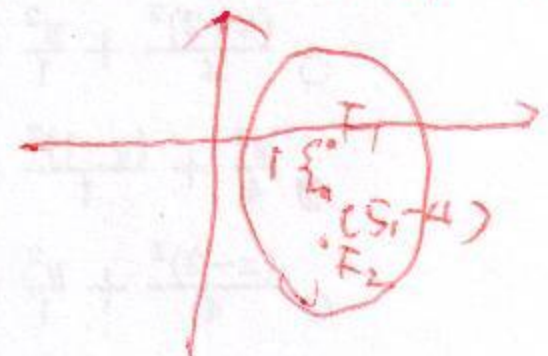
[9.3.3bPT] Find the foci of the ellipse given by  $\frac{(x-5)^2}{8} + \frac{(y+4)^2}{9} = 1$ .

- (5 ± 1, -4)
- (5, -4 ± 3)
- (5 ± 3, -4)
- (5, -4 ± 1)

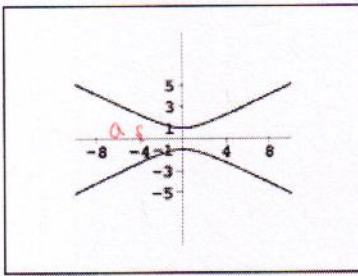
1. Fundamental  
 $\frac{x^2}{8} + \frac{y^2}{9} = 1$



2.  $x \leftarrow x-5 \leftrightarrow$  right 5  
 $y \leftarrow y+4 \leftrightarrow$  down 4.  
 New center (5, -4).  
 New VF (5, -4 ± 1)



[9.4.1bPT] Select the equation of the following graph.



Foci on y-axis

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

$$a=1$$

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

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

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

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

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

7.

[9.4.2aPT] Select the equation of the hyperbola with center at (0,0), focus at (0,7), and vertex at (0,6).

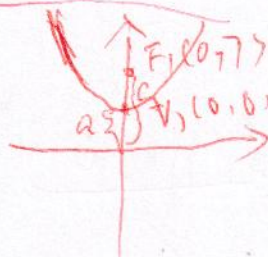
on y-axis

$\frac{y^2}{13} - \frac{x^2}{36} = 1$

$\frac{x^2}{13} - \frac{y^2}{36} = 1$

$\frac{x^2}{36} - \frac{y^2}{13} = 1$

$\frac{y^2}{36} - \frac{x^2}{13} = 1$



$$\left. \begin{array}{l} a=6 \\ c=7 \end{array} \right\} \Rightarrow b^2 = c^2 - a^2 = 49 - 36 = 13$$

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

$$\frac{y^2}{36} - \frac{x^2}{13} = 1$$

8.

[9.4.2bPT] Select the foci of the hyperbola given by  $\frac{x^2}{16} - \frac{y^2}{33} = 1$ .

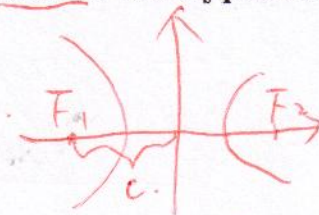
$(0, \pm 4)$

$(\pm 7, 0)$

$(0, \pm 7)$

None of these

$(\pm 4, 0)$



$$c^2 = a^2 + b^2 = 49 \quad c = \pm 7. \quad c = 7$$

$\begin{array}{l} \uparrow \\ a^2 \\ \uparrow \\ b^2 \end{array}$