MAC1140 SEC29 HW 10-11-2007 9.3

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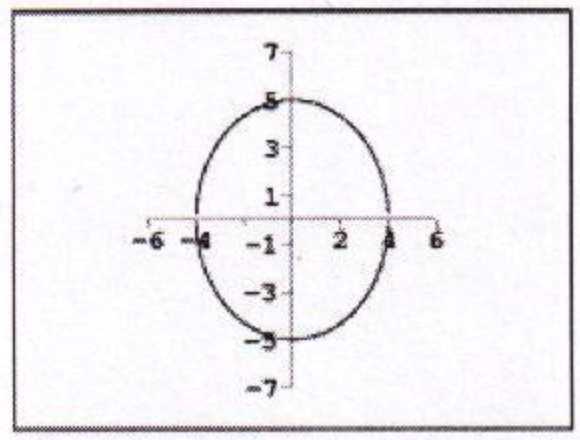
Due: 10-15-2007

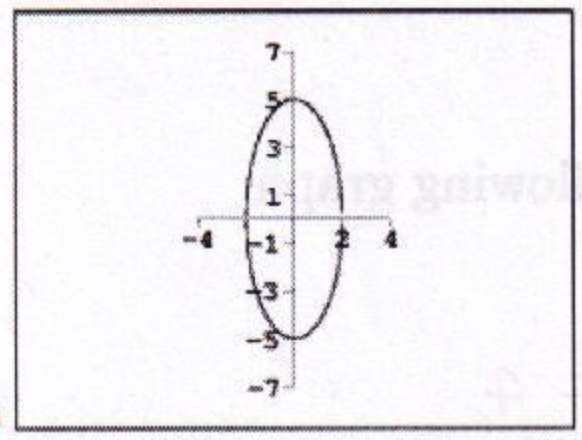
Full Name: Fei Hua Sec#: Extra Credit Attempted?

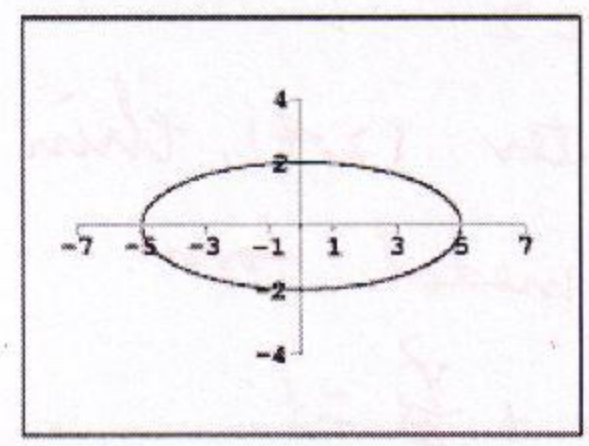
1. [9.3.1aPT]Select the graph of $\frac{x^2}{4} + \frac{y^2}{25} = 1$.

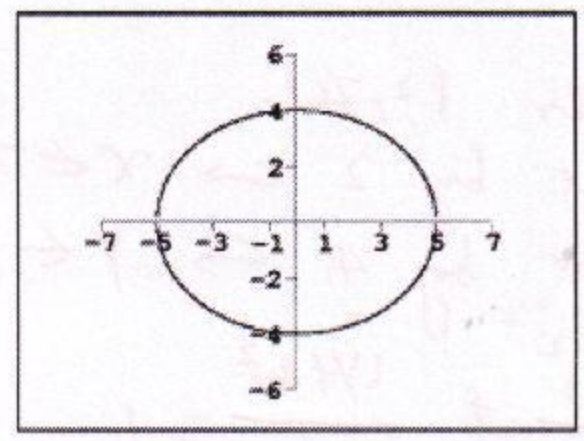
b^2 a^2. $\Rightarrow \begin{cases} a=5 \\ b=2. \end{cases}$

So this ellipse, foci on y axis,

○ 

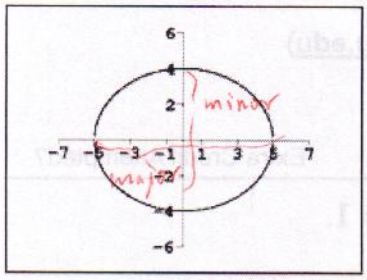
● 

○ 

○ 

2.

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



Foci on x axis; a=5, b=4.
a^2 under x^2.

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

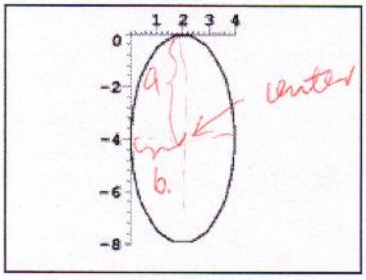
$\frac{x^2}{25} + \frac{y^2}{16} = 1$

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

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

3.

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



center (2, -4).
a = 4
b = 2.
Center (2, -4), thin

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

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

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

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

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

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

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

2. Center (2, -4).
right by 2 $\leftrightarrow$ $x \leftarrow x-2$
down by 4 $\leftrightarrow$ $y \leftarrow y+4$.
$\frac{(x-2)^2}{4} + \frac{(y+4)^2}{16} = 1.$

4.

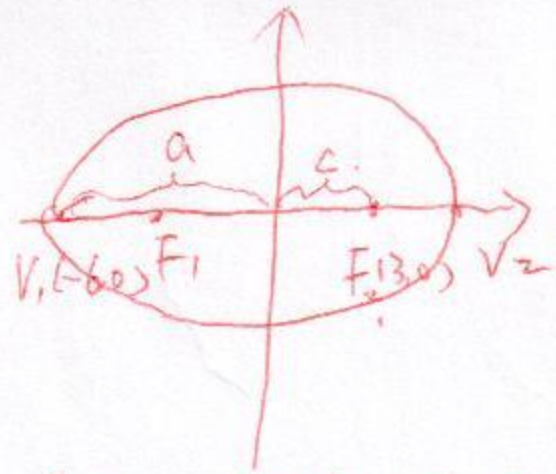
[9.3.2aPT]Select the equation of the ellipse with center at (0,0), focus at $(3, 0)$, and vertex at $(-6, 0)$.

$\frac{x^2}{36} + \frac{y^2}{9} = 1$

$\frac{x^2}{9} + \frac{y^2}{36} = 1$

$\frac{x^2}{27} + \frac{y^2}{36} = 1$

$\frac{x^2}{36} + \frac{y^2}{27} = 1$



So $a=6$. $c=3$.

$b^2 = a^2 - c^2 = 36 - 9 = 27$.

Foci on x-axis, fat one, a^2 under x^2, $\frac{x^2}{36} + \frac{y^2}{27} = 1$

5.

[9.3.2bPT]Find the foci of the ellipse given by $\frac{x^2}{27} + \frac{y^2}{36} = 1$.

b^2 a^2

None of these

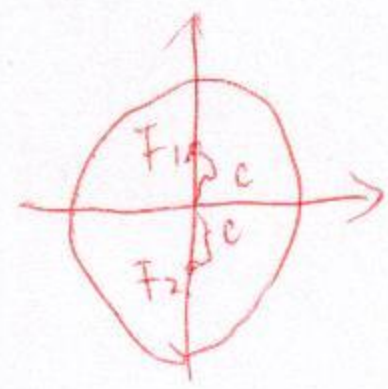
$(0, \pm 3)$

$(\pm 6, 0)$

$(0, \pm 6)$

$(\pm 3, 0)$

Thin, foci on y-axis.



$c^2 = a^2 - b^2 = 36 - 27 = 9$

$c = \pm 3$., $c = 3$