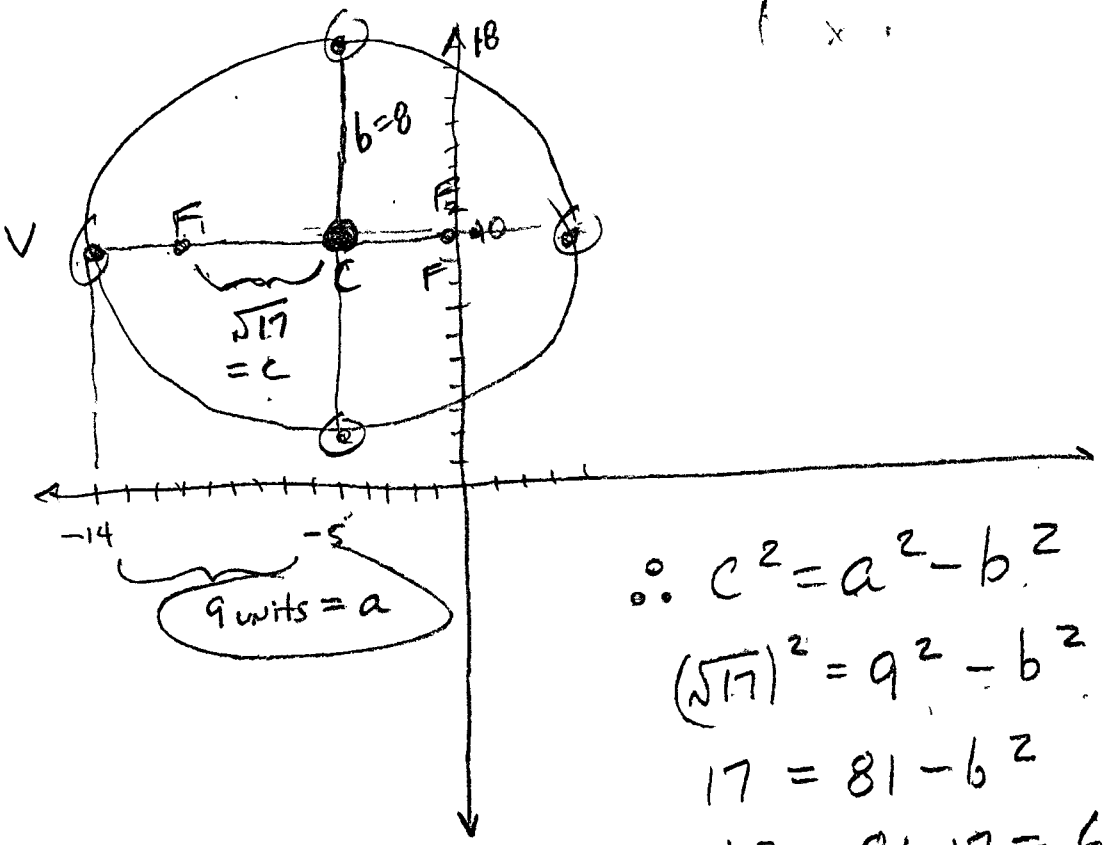
Algebra 2 wed. 2-27-13

CLASS NOTES

Eq. of Ellipse: $\frac{(x-h)^2}{a^2} + \frac{(y-k)^2}{b^2} = 1$

(3.) WORK-SHEET

$C(-5, 10)$, $V(-14, 10)$, $F(-5-\sqrt{17}, 10)$



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

$(\sqrt{17})^2 = 9^2 - b^2$

$17 = 81 - b^2$

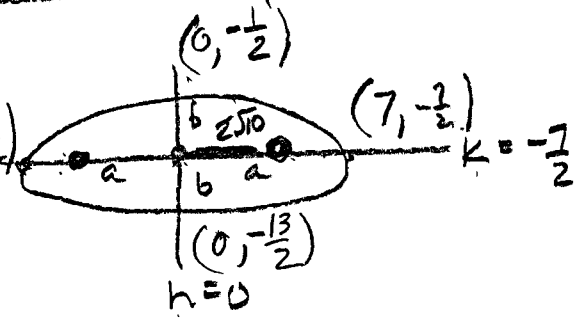
$b^2 = 81 - 17 = 64$

$b = 8$

$\therefore \frac{(x+5)^2}{81} + \frac{(y-10)^2}{64} = 1$

ID C, V, F of each, graph:

(23) $\frac{x^2}{49} + \frac{(y+\frac{7}{2})^2}{9} = 1$



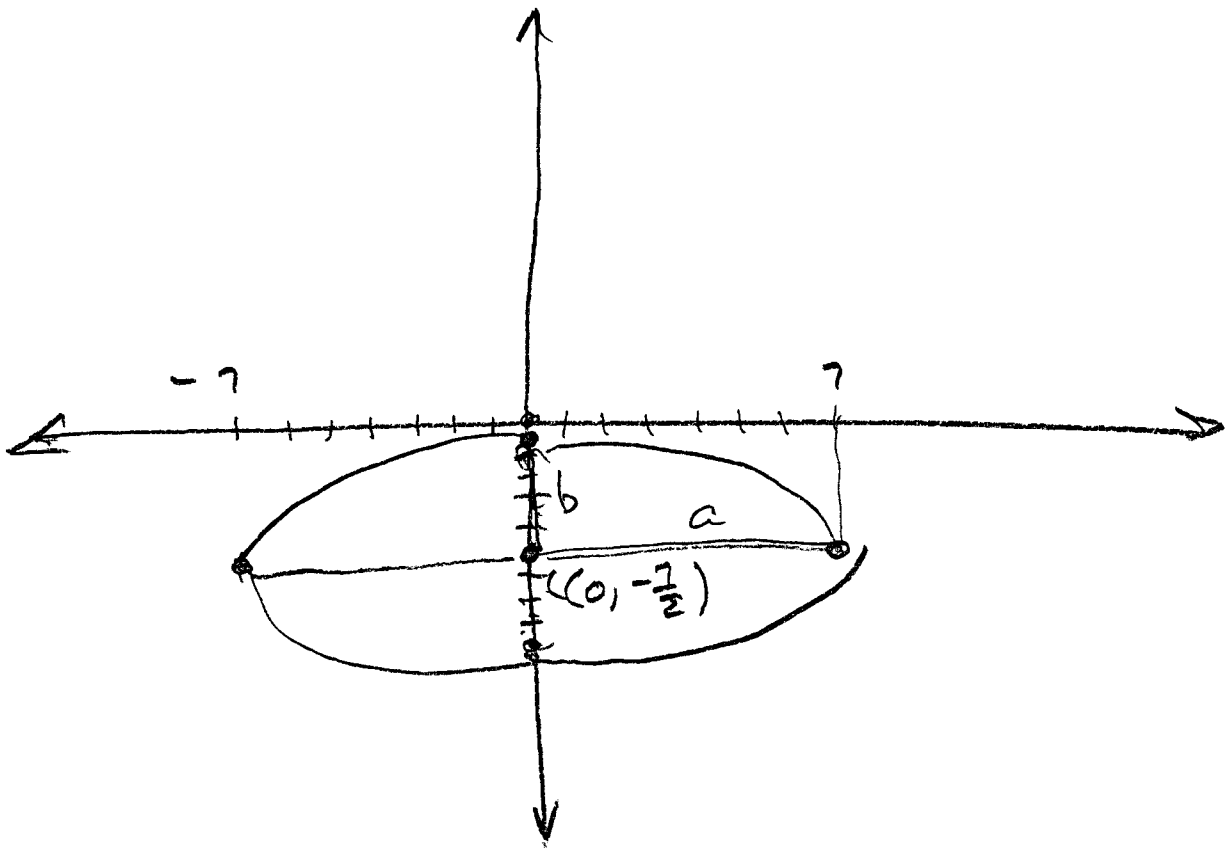
C $(0, -\frac{7}{2})$,

$a = 7$
$b = 3$

Foci $c^2 = a^2 - b^2$ $\quad c^2 = 40$

$c = \sqrt{40} = 2\sqrt{10}$

F $(-2\sqrt{10}, -\frac{7}{2}), (2\sqrt{10}, -\frac{7}{2})$ Fred



(52) $\sec\theta - \tan\theta \sin\theta$

$$\frac{1}{\cos\theta} - \frac{\sin\theta}{\cos\theta} \cdot \sin\theta$$

$$\frac{1}{\cos\theta} - \frac{\sin^2\theta}{\cos\theta}$$

$$\frac{1-\sin^2\theta}{\cos\theta} = \frac{\cos^2\theta}{\cos\theta} = \boxed{\cos\theta}$$

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(67) Evaluate Arithmatic series:

$$\sum_{i=5}^{49} (10-6i) \qquad S_N = \frac{N}{2}(a_1 + a_N)$$

$$= \frac{45}{2}(-20 + 284)$$

$$= \frac{45}{2}\left(-304^{152}\right)$$

$$= \boxed{-6840} \checkmark$$

$a_{49} = 10 - 6 \cdot 49$
$= 10 - 294$
$= -284$

$$\begin{array}{r} 152 \\ \times\ 45 \\ \hline 760 \\ 6080 \\ \hline 6840 \end{array}$$

(97.) Geo. Series – Evaluate

$$S_N = a_1\left(\frac{1-r^N}{1-r}\right)$$

$$\sum_{N=1}^{9} 4(-2)^{N-1}$$

$a_1 = 4$

$a_2 = -8$

$\therefore r = -2$

$$= 4\left(\frac{1-(-2)^9}{1-(-2)}\right)$$

$$= 4\left(\frac{1+512}{3}\right)$$

$$= 4\left(\frac{513}{3}\right)$$

$$= \boxed{684}$$