Clearly show all steps when creating equations as well as for completing the square and graphing.

CHECK EVEN ANSWERS #36-44: (listed in random order)

$\frac{(x-1)^2}{4}-\frac{(y-2)^2}{5}=1$ $\frac{(x+1)^2}{9}+\frac{(y-1)^2}{25}=1$ $\frac{(x-3)^2}{9}+\frac{y^2}{25}=1$ $\frac{(x-2)^2}{9}-\frac{(y+1)^2}{27}=1$ $(y-3)^2=-4(x-2)$

Show all steps when solving for these equations!
A rough sketch of the given information may be helpful.

For #47-53odd, sketch graph, identify all values (except asymptotes) as listed in the book instructions. Use central box method to show each pair of asymptotes.

47–58 Graphing Shifted Conics Complete the square to determine whether the graph of the equation is an ellipse, a parabola, a hyperbola, or a degenerate conic. If the graph is an ellipse, find the center, foci, vertices, and lengths of the major and minor axes. If it is a parabola, find the vertex, focus, and directrix. If it is a hyperbola, find the center, foci, vertices, and asymptotes. Then sketch the graph of the equation.

Just sketch asymptotes using the central box method. Equation of asymptotes not necessary.

35–46 Finding the Equation of a Shifted Conic Find an equation for the conic section with the given properties.

36. The ellipse with vertices $V_1\,(-1, -4)$ and $V_2\,(-1, 6)$ and foci $F_1\,(-1, -3)$ and $F_2\,(-1, 5)$

distance = 10

$2a = 10$

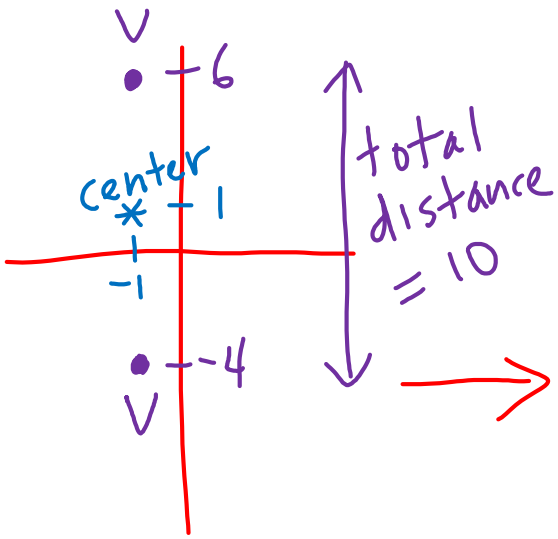
$a = 5$

distance = 8

So $c = 4$

use $c^2 = a^2 - b^2$ to solve for b

Vertical orientation



Center = $(-1, 1)$

$h \quad k$

Continued on next slide

CHECK EVEN ANSWERS #36-44: (listed in random order)

$\frac{(x-1)^2}{4} - \frac{(y-2)^2}{5} = 1$ $\quad \frac{(x+1)^2}{9} + \frac{(y-1)^2}{25} = 1$ $\quad \frac{(x-3)^2}{9} + \frac{y^2}{25} = 1$ $\quad \frac{(x-2)^2}{9} - \frac{(y+1)^2}{27} = 1$ $\quad (y-3)^2 = -4(x-2)$

Show all steps when solving for these equations!
A rough sketch of the given information may be helpful.

For #47-53odd, sketch graph, identify all values (except asymptotes) as listed in the book instructions. Use central box method to show each pair of asymptotes.

35–46 Finding the Equation of a Shifted Conic Find an equation for the conic section with the given properties.

36. The ellipse with vertices $V_1\,(-1,-4)$ and $V_2\,(-1,6)$ and foci $F_1\,(-1,-3)$ and $F_2\,(-1,5)$

Continued..

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

$4^2 = 5^2 - b^2$

$16 = 25 - b^2$

$-9 = -b^2$

$9 = b^2$

$3 = b$

from previous slide

$a = 5$

$(h,k) = (-1,1)$

ellipse $\dfrac{(x-h)^2}{b^2} + \dfrac{(y-k)^2}{a^2} = 1$

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

← largest # Vertical orientation

CHECK EVEN ANSWERS #36-44: (listed in random order)

$\frac{(x-1)^2}{4} - \frac{(y-2)^2}{5} = 1$ $\quad \frac{(x+1)^2}{9} + \frac{(y-1)^2}{25} = 1$ $\quad \frac{(x-3)^2}{9} + \frac{y^2}{25} = 1$ $\quad \frac{(x-2)^2}{9} - \frac{(y+1)^2}{27} = 1$ $\quad (y-3)^2 = -4(x-2)$

Show all steps when solving for these equations!
A rough sketch of the given information may be helpful.

For #47-53odd, sketch graph, identify all values (except asymptotes) as listed in the book instructions. Use central box method to show each pair of asymptotes.