**34.** The semi-major axis has length $2\sqrt{13}$ units, and the foci are at $(-1, 1)$ and $(-1, -5)$.

$a = 2\sqrt{13} \rightarrow a^2 = (2\sqrt{13})^2 = 52$

$c = 3$

$b =$

$h = -1$

$k = -2$

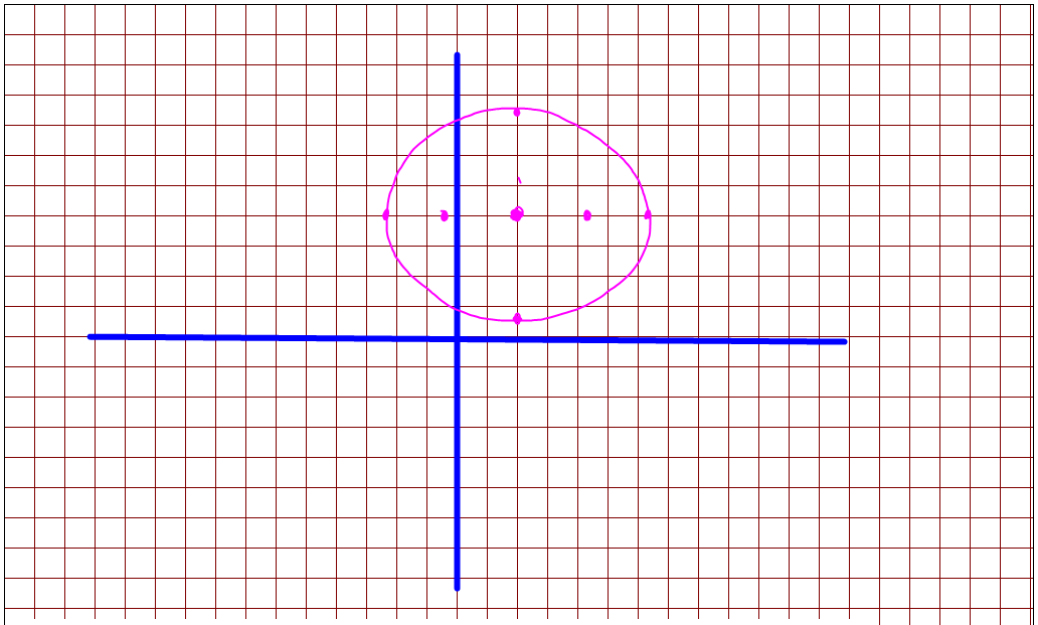
$c^2 = a^2 - b^2$

$9 = 52 - b^2$

$b^2 = 43$

| | |
|---|---|
| F. | $(-1, 1)$ |
| C. | $(-1, -2)$ |
| F. | $(-1, -5)$ |

$$\frac{(y+2)^2}{52} + \frac{(x+1)^2}{43} = 1$$



**27.** $18y^2 + 12x^2 - 144y - 48x = -120$

$18(y^2 - 8y + 16) + 12(x^2 - 4x + 4) = -120 + 18(16) + 12(4)$

$$\frac{18(y-4)^2}{216} + \frac{12(x-2)^2}{216} = \frac{216}{216}$$

$$\boxed{\frac{(y-4)^2}{12} + \frac{(x-2)^2}{18} = 1}$$

$h = 2$
$k = 4$

$a^2 = 18$
$a = \sqrt{18} = 3\sqrt{2}$

$b^2 = 12$
$b = \sqrt{12}$

$c^2 = 18 - 12$
$c^2 = 6$
$c = \sqrt{6}$

$a = 3\sqrt{2}$
$b = 2\sqrt{3}$
$c = \sqrt{6}$

center $(2, 4)$

vertices major $(2 \pm 3\sqrt{2}, 4)$
minor $(2, 4 \pm 2\sqrt{3})$

foci $(2 \pm \sqrt{6}, 4)$

$(2+3\sqrt{2}, 4)(2-3\sqrt{2}, 4)$