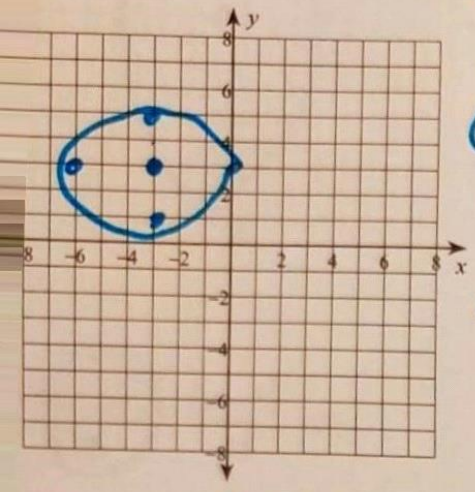
[redacted]aphing and Properties of Ellipses

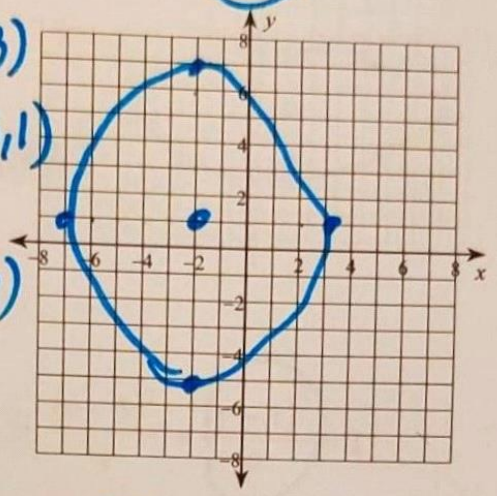
[redacted]ntify the center, vertices, co-vertices, and foci of each. Then sketch the graph.

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



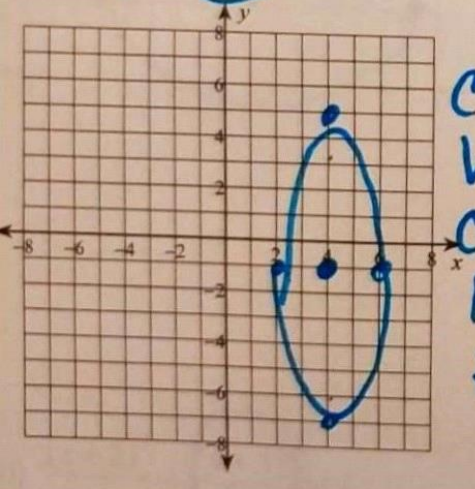
C: (-3,3)
V: (-6,3), (0,3)
CV: (-3,5), (-3,1)
F: $\pm\sqrt{5}$
FP: $(-3\pm\sqrt{5}, 3)$

2) $\frac{(x+2)^2}{25} + \frac{(y-1)^2}{36} = 1$



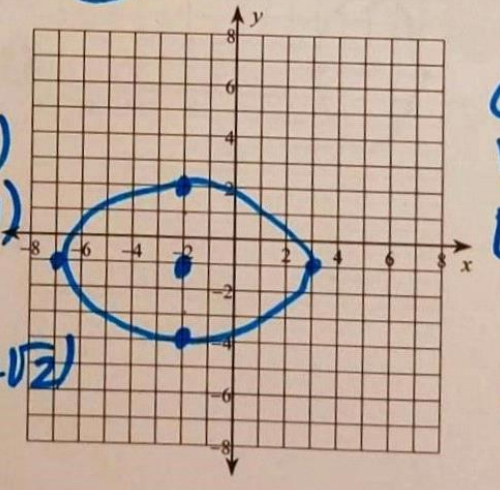
C: (-2,1)
V: (-2,7), (-2,-5)
CV: (3,1), (-7,1)
F: $\pm\sqrt{11}$
FP: $(-2, 1\pm\sqrt{11})$

3) $\frac{(x-4)^2}{4} + \frac{(y+1)^2}{36} = 1$



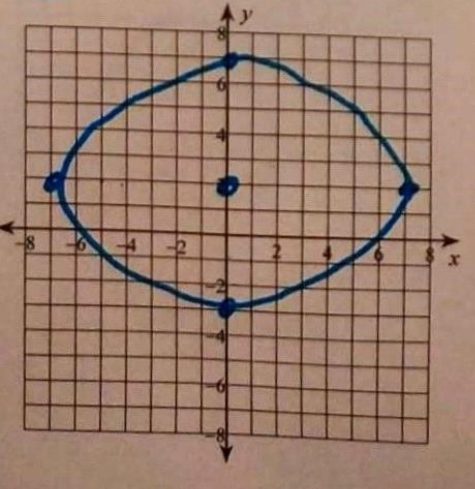
C: (4,-1)
V: (4,-7), (4,5)
CV: (6,-1), (2,-1)
F: $\pm 2\sqrt{2}$
FP: $(4, -1\pm 2\sqrt{2})$

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



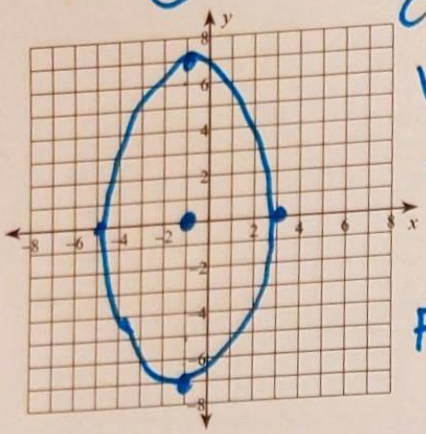
C: (-2,-1)
V: (-7,-1), (3,-1)
CV: (-2,-4), (-2,2)
F: ± 4
FP: $(-2\pm 4, -1)$
$(-6,-1)$
$(2,-1)$

5) $\frac{x^2}{49} + \frac{(y-2)^2}{25} = 1$



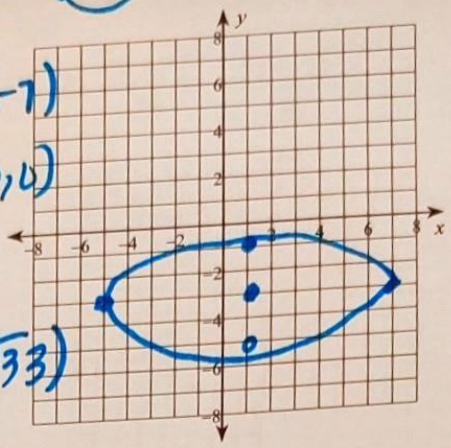
C: (0,2)
V: (-7,2), (7,2)
CV: (0,7), (0,-3)
F: $\pm 2\sqrt{6}$
FP: $(0\pm 2\sqrt{6}, 2)$

6) $\frac{(x+1)^2}{16} + \frac{y^2}{49} = 1$



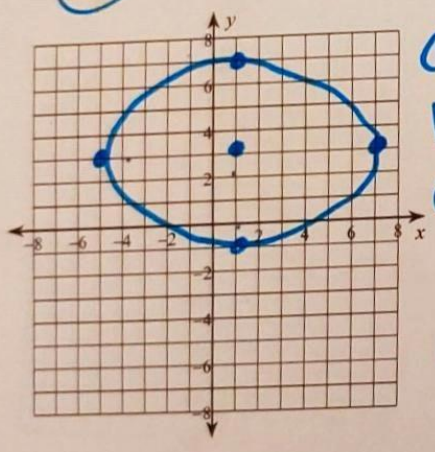
C: (-1, 0)
V: (-1, 7), (-1, -7)
CV: (-5, 0), (3, 0)
F: $\pm\sqrt{33}$
FP: $(-1, 0 \pm \sqrt{33})$

7) $\frac{(x-1)^2}{36} + \frac{(y+3)^2}{4} = 1$



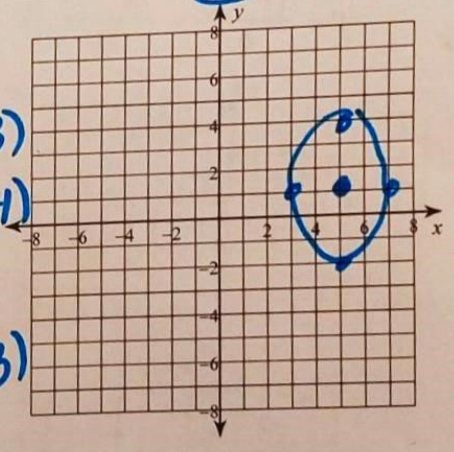
C: (1, -3)
V: (7, -3), (-5, -3)
CV: (1, -5), (1, -1)
F: $\pm 4\sqrt{2}$
FP: $(\pm 4\sqrt{2}, -3)$

8) $\frac{(x-1)^2}{36} + \frac{(y-3)^2}{16} = 1$



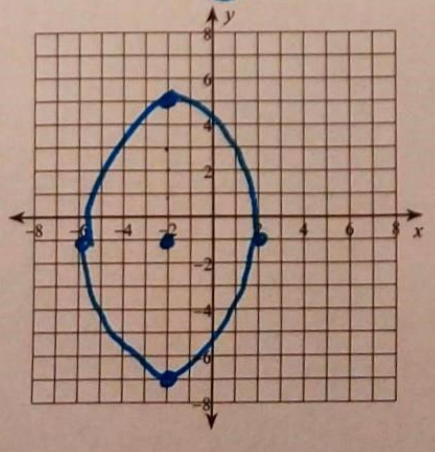
C: (1, 3)
V: (7, 3), (-5, 3)
CV: (1, 7), (1, -1)
F: $\pm 2\sqrt{5}$
FP: $(1 \pm 2\sqrt{5}, 3)$

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



C: (5, 1)
V: (5, 4), (5, -2)
CV: (7, 1), (3, 1)
F: $\pm\sqrt{5}$
FP: $(5, 1 \pm \sqrt{5})$

10) $\frac{(x+2)^2}{16} + \frac{(y+1)^2}{36} = 1$



C: (-2, -1)
V:
CV:
F: $\pm 2\sqrt{5}$
FP: $(-2, -1 \pm 2\sqrt{5})$