

4) Ellipse, foci $(0, -1)$, $(8, -1)$ vertex $(9, -1)$

Since the foci $(0, -1)$, $(8, -1) \rightarrow$ Horizontal
Axis

Center at $c = \frac{8-0}{2} = 4 \Rightarrow (4, -1)$

Vertex $(9, -1)$ is 5 units from the center

$$\text{So } a = 5, \quad b = \sqrt{a^2 - c^2} = \sqrt{25 - 16} = \sqrt{9} = 3$$

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

