

4. Focus: $(6, 0)$ DIR: $x = -6$

h, k, p

$$\begin{aligned} h+p &= 6 \\ h-p &= -6 \\ \hline 2h &= 0 \\ \frac{2h}{2} &= \frac{0}{2} \\ \hline h &= 0 \end{aligned}$$

$$\begin{aligned} h+p &= 6 \\ 0+p &= 6 \\ \hline p &= 6 \end{aligned}$$

$$\begin{aligned} (y-k)^2 &= 4p(x-h) \\ (y-0)^2 &= 4(6)(x-0) \\ \hline y^2 &= 24x \end{aligned}$$

5. Focus: $(0, 12)$ DIR: $y = -12$

$$\begin{aligned} k+p &= 12 \\ k-p &= -12 \\ \hline 2k &= 0 \\ \frac{2k}{2} &= \frac{0}{2} \\ \hline k &= 0 \end{aligned}$$

$$\begin{aligned} k+p &= 12 \\ 0+p &= 12 \\ \hline p &= 12 \end{aligned}$$

$$\begin{aligned} (x-h)^2 &= 4p(y-k) \\ (x-0)^2 &= 4(12)(y-0) \\ \hline x^2 &= 48y \end{aligned}$$

6. Vertex $(4, -3)$ Focus: $(7, -3)$

$$\begin{aligned} h &= 4 \\ k &= -3 \end{aligned}$$

$$\begin{aligned} h+p &= 7 \\ 4+p &= 7 \\ p &= 7-4 \\ \hline p &= 3 \end{aligned}$$

$$\begin{aligned} (y-k)^2 &= 4p(x-h) \\ (y-(-3))^2 &= 4(3)(x-4) \\ \hline (y+3)^2 &= 12(x-4) \end{aligned}$$