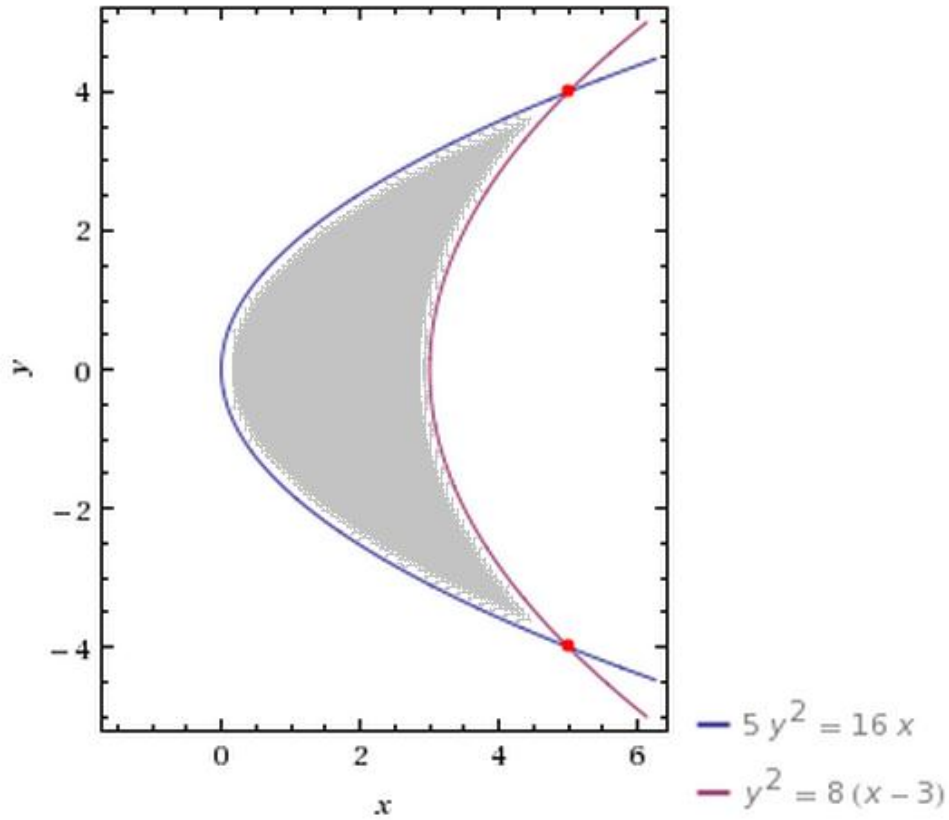


We have:

$$\{5y^2 = 16x; y^2 = 8x + 24\}$$

Plot of solution set:



We have:

$$\begin{cases} 5y^2 = 16x \\ y^2 = 8(x+3) \end{cases}$$

Solutions: (5, -4); (5, 4)

So, our integral is:

$$\int_{-4}^4 dy \int_{\frac{5}{16}y^2}^{\frac{y^2}{8}+3} dx = \int_{-4}^4 \left(\frac{y^2}{8} + 3 - \frac{5}{16}y^2\right) dy = \int_{-4}^4 \left(3 - \frac{3}{16}y^2\right) dy = \left(3y - \frac{1}{16}y^3\right) \Big|_{-4}^4 = 24 - 8 = 16$$

Answer: 16