

$$5. \int_C \underbrace{(y^2)}_M dx + \underbrace{(3xy)}_N dy$$

$$= \int_{x=0}^{x=16} \int_{y=0}^{y=\sqrt{x}} (3y - 2y) dy dx$$

$$= \int_{x=0}^{x=16} \int_{y=0}^{y=\sqrt{x}} y dy dx$$

$$= \int_{x=0}^{x=16} \left[\frac{1}{2} y^2 \right]_{y=0}^{y=\sqrt{x}} dx$$

$$= \frac{1}{2} \int_{x=0}^{x=16} \left[(\sqrt{x})^2 - (0)^2 \right] dx$$

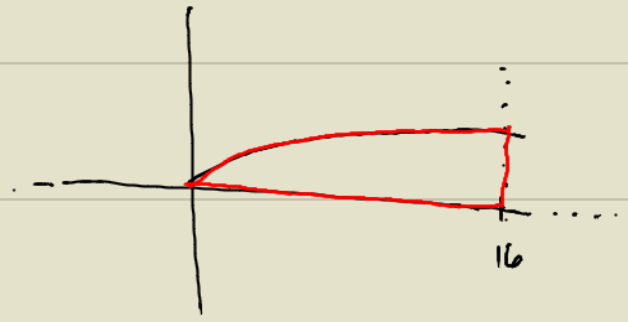
$$= \frac{1}{2} \int_{x=0}^{x=16} x dx$$

$$= \frac{1}{2} \left[\frac{1}{2} x^2 \right]_{x=0}^{x=16}$$

$$= \frac{1}{2} \cdot \frac{1}{2} [16^2 - 0^2]$$

$$= \frac{1}{4} (256)$$

$$= \textcircled{64}$$



POI's

$$0 = \sqrt{x}$$

$$0 = x$$