

$$4. \int_{x=0}^{x=8} \int_{y=0}^{y=4} \frac{y}{4} dy dx$$

$$= \frac{1}{4} \int_{x=0}^{x=8} \left[\frac{1}{2} y^2 \right]_{y=0}^{y=4} dx$$

$$= \frac{1}{8} \int_{x=0}^{x=8} (4^2 - 0^2) dx$$

$$= \frac{1}{8} \cdot 16 \int_{x=0}^{x=8} dx$$

$$= 2 [x]_{x=0}^{x=8}$$

$$= 2 [8 - 0]$$

$$= \textcircled{16}$$