

Quiz 10

$$\boxed{1} \int \frac{x}{(\sqrt{25-x^2})^3} dx$$

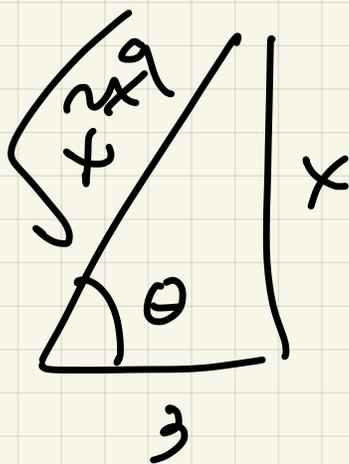
$$\begin{aligned}x &= 5 \sin \theta \\ dx &= 5 \cos \theta d\theta \\ \sqrt{25-x^2} &= 5 \cos \theta\end{aligned}$$

$$\int \frac{5 \sin \theta \cdot 5 \cos \theta d\theta}{(5 \cos \theta)^3} = \int \frac{\sin \theta d\theta}{5 \cos^2 \theta}$$

$$\boxed{2} \int \frac{dx}{(\sqrt{9+x^2})^3}$$

$$\begin{aligned}x &= 3 \tan \theta \\ dx &= 3 \sec^2 \theta d\theta \\ \sqrt{9+x^2} &= 3 \sec \theta\end{aligned}$$

$$\int \frac{3 \sec^2 \theta d\theta}{(3 \sec \theta)^3} = \frac{1}{9} \int \cos \theta d\theta = \frac{\sin \theta}{9} + C$$



$$\frac{x}{9 \sqrt{x^2+9}} + C$$