

$$\int \frac{x}{(4-25x^2)^{3/2}} dx$$

$U = 4 - 25x^2$   
 $dU = -50x dx \rightarrow dx = \frac{dU}{-50x}$

$$= -\frac{1}{50} \int \frac{du}{U^{3/2}} = \frac{-U^{-1/2}}{(-\frac{1}{2})50} + K$$

$\cancel{(25)}^{3/2}$   
 $\cancel{5}^{6/2} = \cancel{5}^3$   
 $= 125$

$$\rightarrow \frac{(4-25x^2)^{-1/2}}{25} + C \quad \text{or} \quad \frac{1}{25\sqrt{4-25x^2}} + C$$

$= \frac{1}{50\sqrt{1-\frac{25}{4}x^2}}$

$$\int \frac{x}{(4-25x^2)^{3/2}} dx = \frac{1}{125} \int \frac{x}{(\frac{4}{25} - x^2)^{3/2}} dx$$

$$dx = \frac{2}{5} \cdot \cos \theta d\theta$$

$$x = \frac{2}{5} \cos \theta$$

$$x^2 = \frac{4}{25} \cos^2 \theta$$

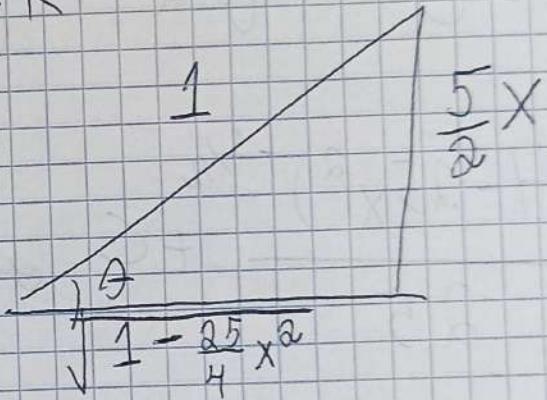
$$\frac{1}{125} \int \frac{\frac{2}{5} \cos \theta \cdot \frac{2}{5} \cdot \cos \theta d\theta}{(\frac{4}{25})^{3/2} (1 - \cos^2 \theta)^{3/2}}$$

$$\frac{4}{25} \cdot \frac{1}{125} \int_{8^\circ}^{\text{sen } \theta, \cos \theta} \frac{\cos^3 \theta}{\cos^3 \theta} d\theta$$

$$= \frac{1}{50} \int \frac{\sin \theta}{\cos^2 \theta} d\theta \quad u = \cos \theta$$

$$du = -\sin \theta d\theta$$

$$-\frac{1}{50} \int \frac{1}{u^2} du = \frac{1}{50u} + K$$



$$\frac{2}{5} \sin \theta = x \rightarrow \sin \theta = \frac{5}{2} x$$

$$\cos \theta = \sqrt{1 - \frac{25}{4} x^2}$$

$$\rightarrow \frac{1}{50 \sqrt{1 - \frac{25}{4} x^2}} + K$$