Quiz 10

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

$x = 5\sin\theta$

$dx = 5\cos\theta\,d\theta$

$\sqrt{25-x^2} = 5\cos\theta$

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

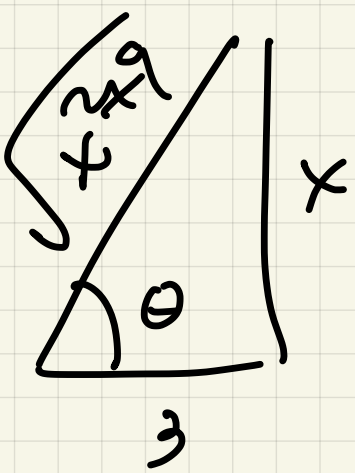
2 $\int \frac{dx}{(\sqrt{9+x^2})^3}$

$x = 3\tan\theta$

$dx = 3\sec^2\theta\,d\theta$

$\sqrt{9+x^2} = 3\sec\theta$

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



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