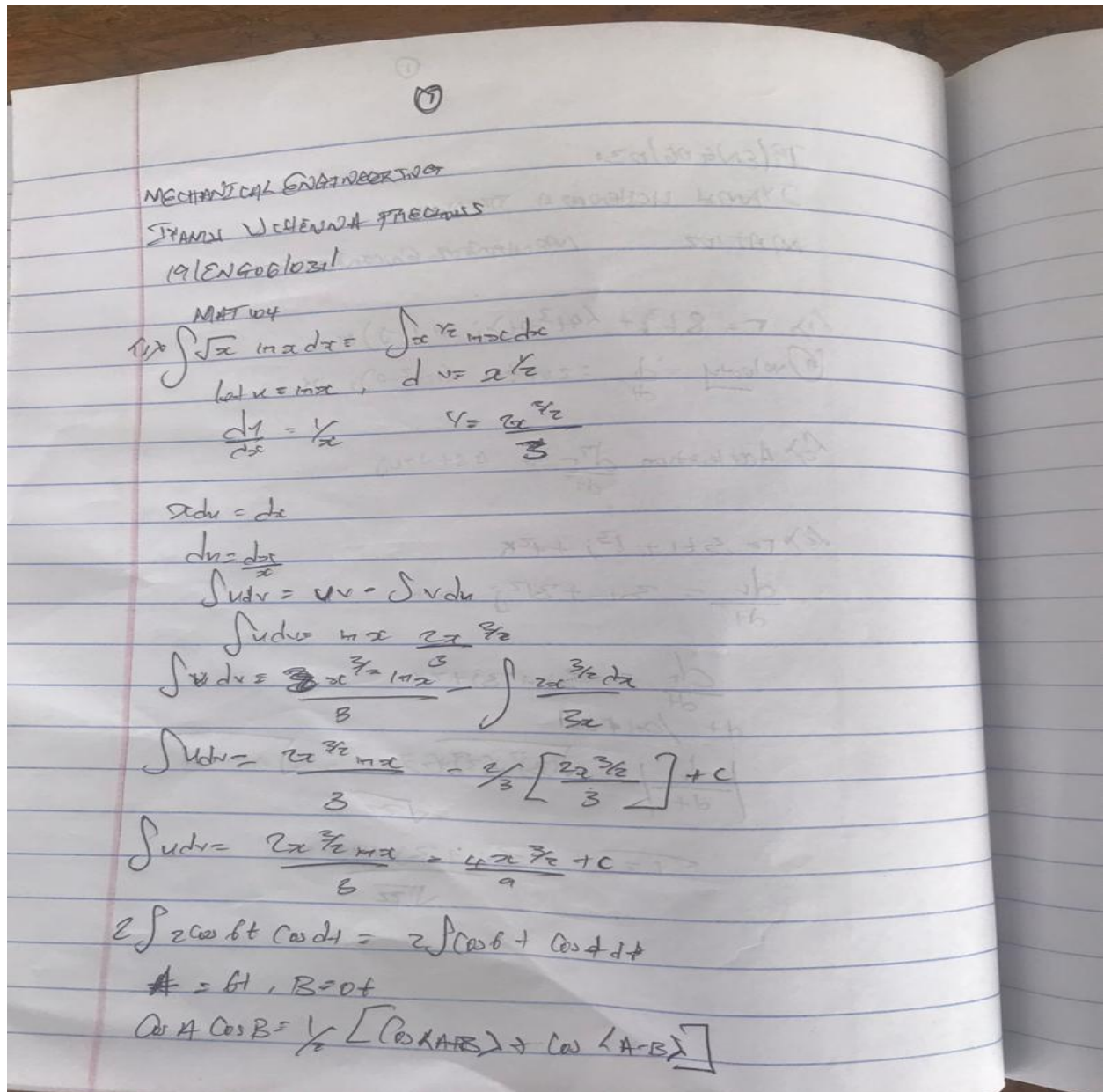


IYAMU UCHENNA PRECIOS

19/ENG06/031

MECHANICAL ENGINEERING

MAT104



$$\cos A \cos B = \frac{1}{2} [\cos(A+B) + \cos(A-B)]$$

$$\cos A \cos B = \frac{1}{2} [\cos 7t + \cos 5t]$$

$$2 \int \cos 7t + \cos 5t dt = \frac{1}{2} \int [\cos 7t + \cos 5t] dt$$

$$2 \int \cos 7t + \cos 5t dt = 2 \left[\frac{\sin 7t}{7} + \frac{\sin 5t}{5} \right] + c$$

$$\int 2 \cos 7t + \cos 5t dt = \frac{\sin 7t}{7} + \frac{\sin 5t}{5} + c$$

$$13) \int \sin^3 x \cos^4 x dx$$

$$u = \cos x$$

$$\frac{du}{dx} = -\sin x \quad dx = \frac{-du}{\sin x}$$

$$\sin^2 x + \cos^2 x = 1$$

$$\sin^2 x = 1 - \cos^2 x$$

$$= \int \sin x \sin^2 x \cdot \frac{-u^4 du}{\sin x}$$

$$= - \int \sin^2 x u^4 dx$$

$$= \int (1-u^2) u^4 du$$

$$(u^5 - u^7) du$$

$$\int \sin^3 x \cos^4 x dx = \frac{(\cos x)^7}{7} - \frac{(\cos x)^5}{5} + c$$