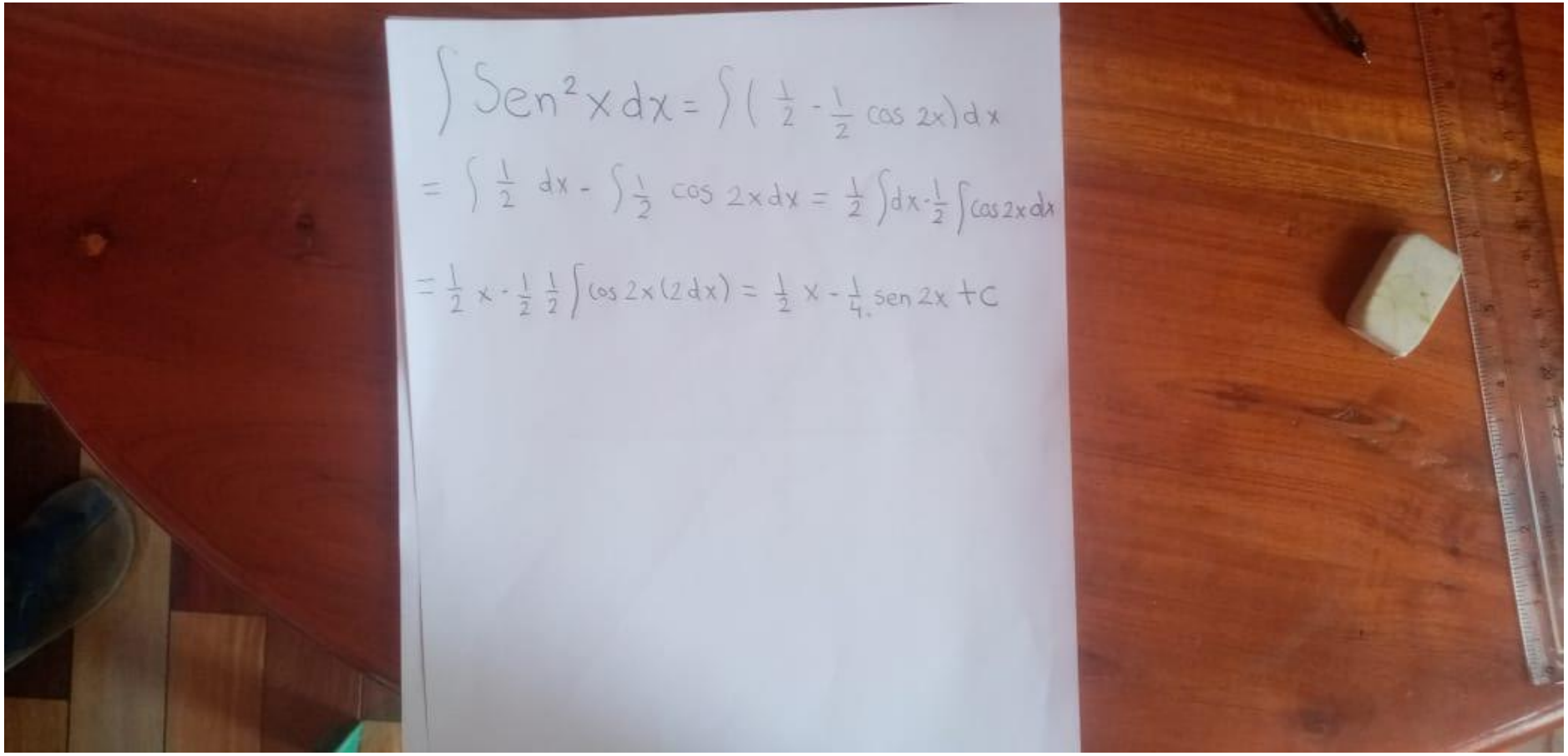
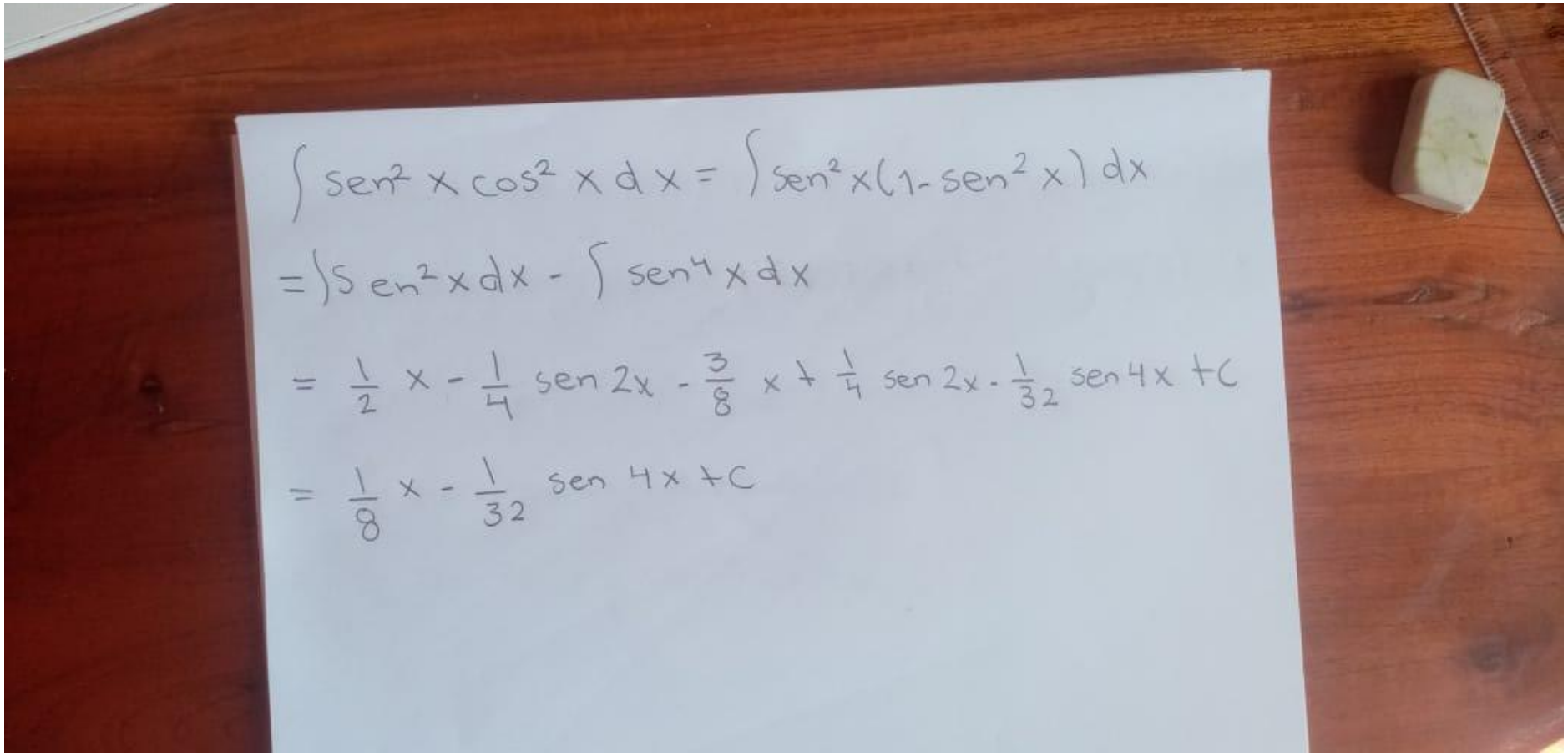

$\int \text{Sen}^2 x\,dx = \int \left(\frac{1}{2} - \frac{1}{2}\cos 2x\right)dx$
$= \int \frac{1}{2}\,dx - \int \frac{1}{2}\cos 2x\,dx = \frac{1}{2}\int dx - \frac{1}{2}\int \cos 2x\,dx$
$= \frac{1}{2}x - \frac{1}{2}\,\frac{1}{2}\int \cos 2x\,(2\,dx) = \frac{1}{2}x - \frac{1}{4}\,\text{sen}\,2x + C$

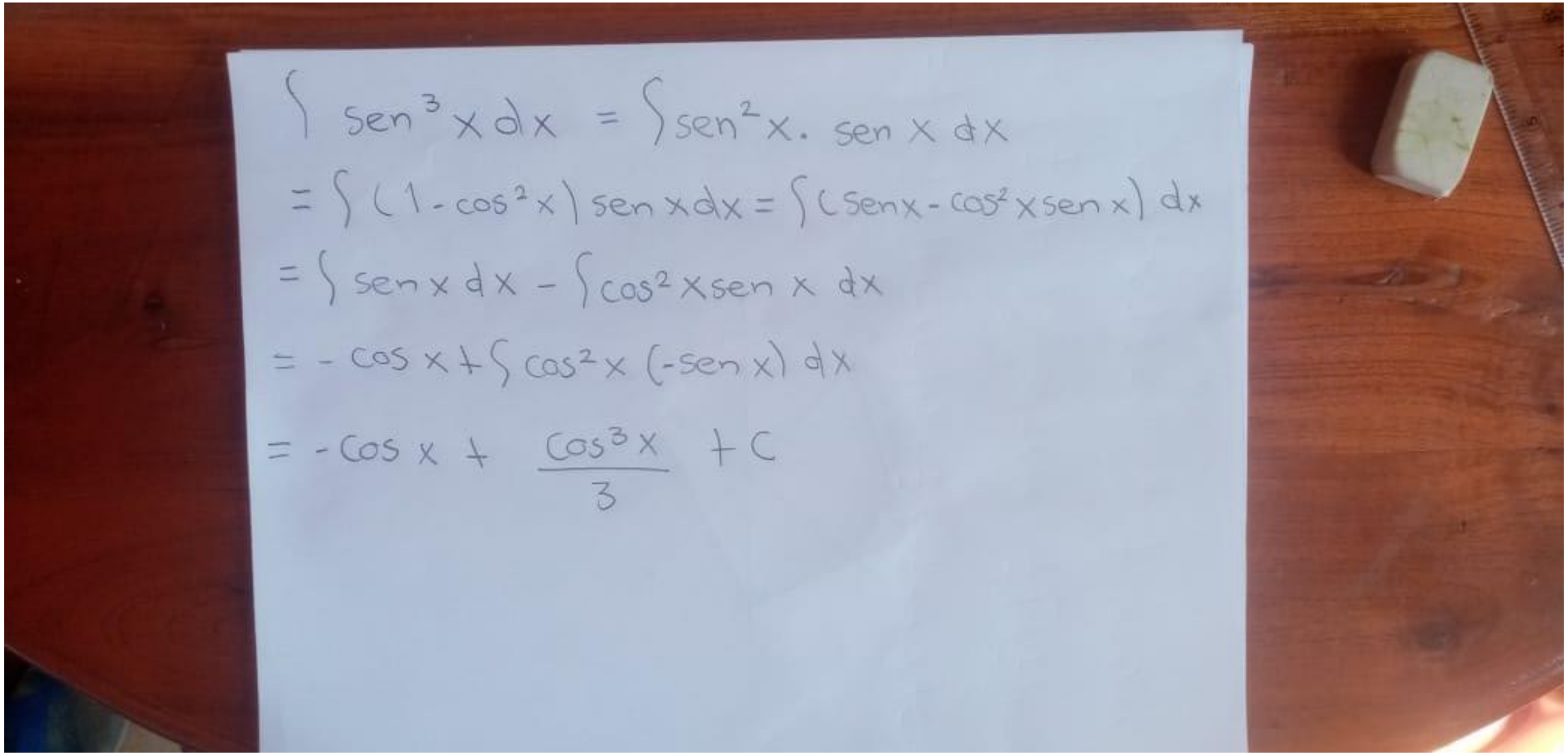


$$\int \operatorname{sen}^2 x \cos^2 x \, dx = \int \operatorname{sen}^2 x (1 - \operatorname{sen}^2 x) \, dx$$

$$= \int \operatorname{sen}^2 x \, dx - \int \operatorname{sen}^4 x \, dx$$

$$= \frac{1}{2} x - \frac{1}{4} \operatorname{sen} 2x - \frac{3}{8} x + \frac{1}{4} \operatorname{sen} 2x - \frac{1}{32} \operatorname{sen} 4x + C$$

$$= \frac{1}{8} x - \frac{1}{32} \operatorname{sen} 4x + C$$



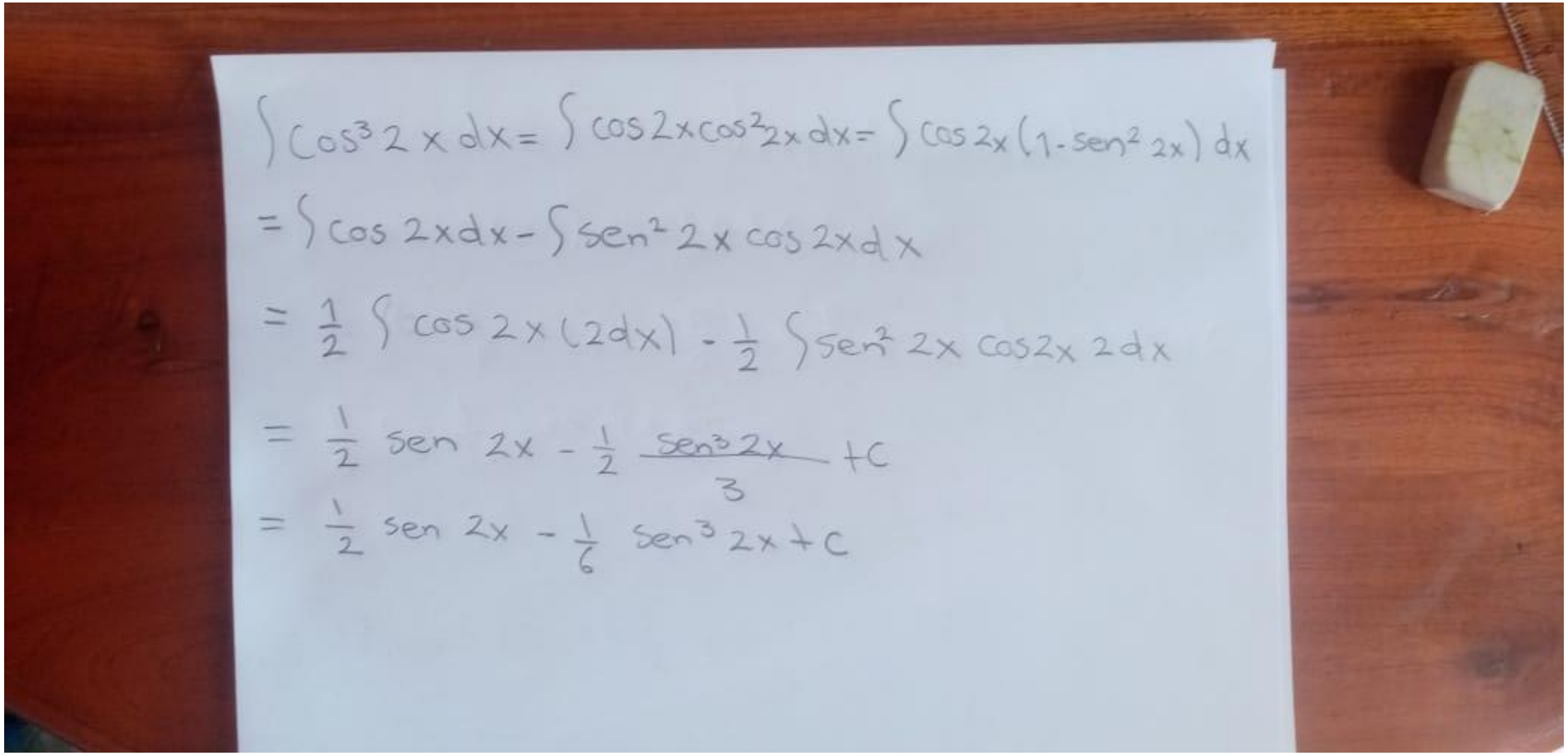
$$\int \operatorname{sen}^3 x\,dx = \int \operatorname{sen}^2 x \cdot \operatorname{sen} x\,dx$$

$$= \int (1-\cos^2 x)\operatorname{sen} x\,dx = \int (\operatorname{sen} x - \cos^2 x \operatorname{sen} x)\,dx$$

$$= \int \operatorname{sen} x\,dx - \int \cos^2 x \operatorname{sen} x\,dx$$

$$= -\cos x + \int \cos^2 x\,(-\operatorname{sen} x)\,dx$$

$$= -\cos x + \frac{\cos^3 x}{3} + C$$



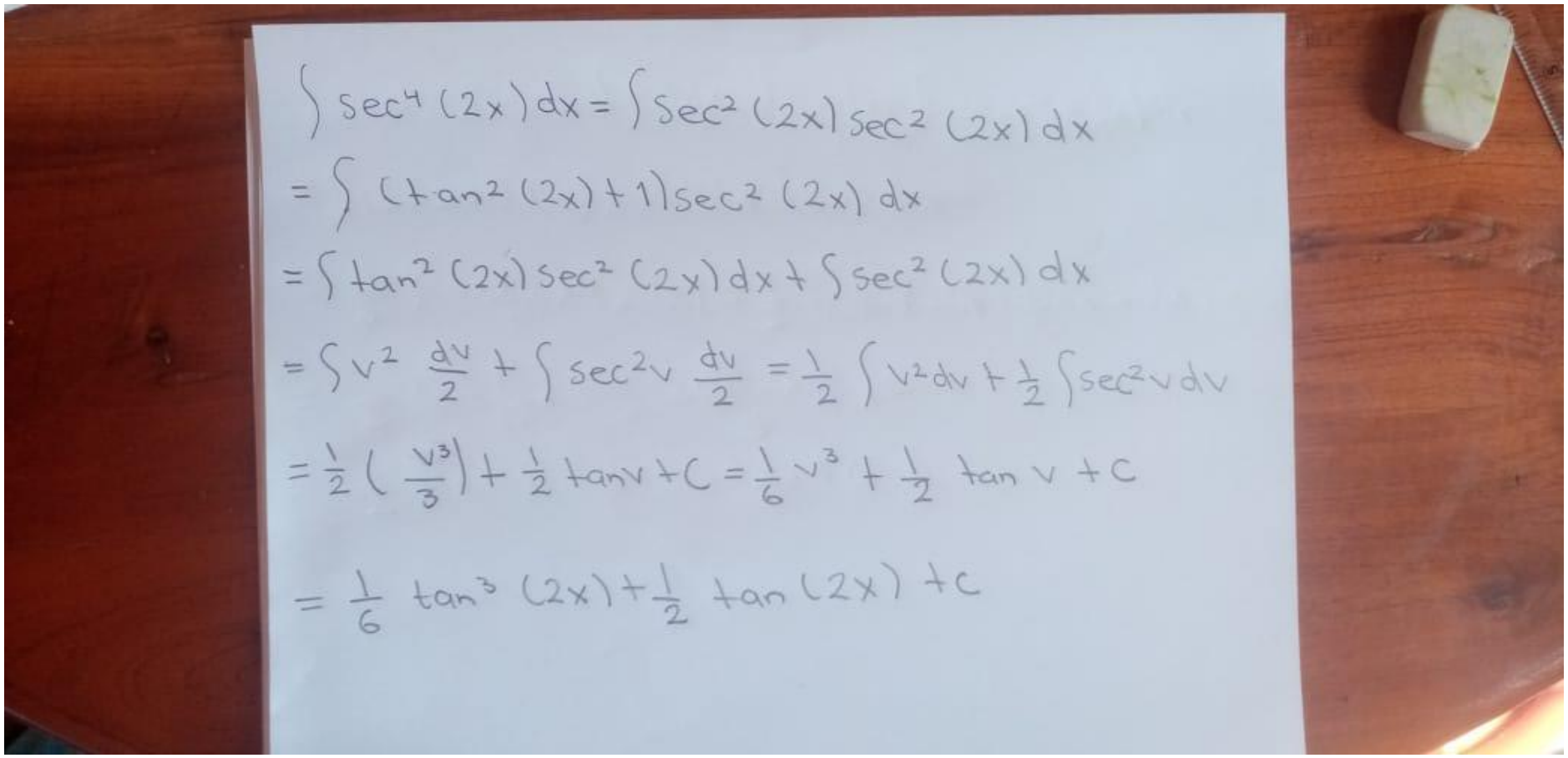
$$\int \cos^3 2x\,dx = \int \cos 2x \cos^2 2x\,dx = \int \cos 2x\,(1-\operatorname{sen}^2 2x)\,dx$$

$$= \int \cos 2x\,dx - \int \operatorname{sen}^2 2x \cos 2x\,dx$$

$$= \frac{1}{2}\int \cos 2x\,(2dx) - \frac{1}{2}\int \operatorname{sen}^2 2x \cos 2x\,2dx$$

$$= \frac{1}{2}\operatorname{sen} 2x - \frac{1}{2}\,\frac{\operatorname{sen}^3 2x}{3} + C$$

$$= \frac{1}{2}\operatorname{sen} 2x - \frac{1}{6}\operatorname{sen}^3 2x + C$$



$$\int \sec^4(2x)\,dx = \int \sec^2(2x)\sec^2(2x)\,dx$$

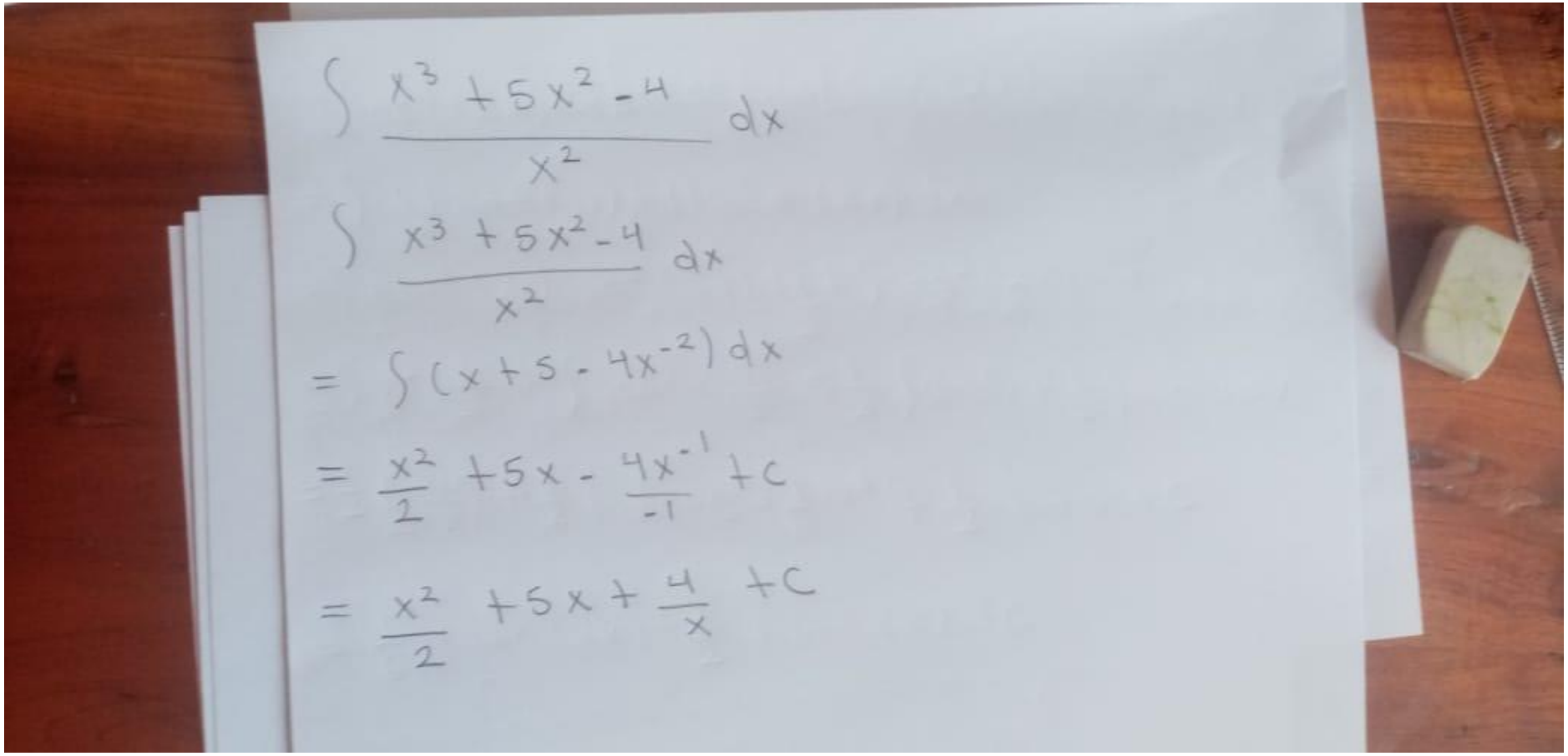
$$= \int (\tan^2(2x)+1)\sec^2(2x)\,dx$$

$$= \int \tan^2(2x)\sec^2(2x)\,dx + \int \sec^2(2x)\,dx$$

$$= \int v^2 \frac{dv}{2} + \int \sec^2 v \frac{dv}{2} = \frac{1}{2}\int v^2\,dv + \frac{1}{2}\int \sec^2 v\,dv$$

$$= \frac{1}{2}\left(\frac{v^3}{3}\right) + \frac{1}{2}\tan v + C = \frac{1}{6}v^3 + \frac{1}{2}\tan v + C$$

$$= \frac{1}{6}\tan^3(2x) + \frac{1}{2}\tan(2x) + C$$



$$\int \frac{x^3 + 5x^2 - 4}{x^2} \, dx$$

$$\int \frac{x^3 + 5x^2 - 4}{x^2} \, dx$$

$$= \int (x + 5 - 4x^{-2}) \, dx$$

$$= \frac{x^2}{2} + 5x - \frac{4x^{-1}}{-1} + C$$

$$= \frac{x^2}{2} + 5x + \frac{4}{x} + C$$