**Answer on Question #47615, Math, Differential Calculus - Equations**

*Let u=2sin(x) and v=−4x−8.*

*Find the derivative of their product with respect to x.*

*ddx(uv)=??*

***Solution***

$$\frac{d}{dx}(uv) = v\frac{du}{dx} + u\frac{dv}{dx}$$

$$u = 2\sin x$$

$$v = -4x - 8$$

$$\frac{du}{dx} = \frac{d}{dx}(2\sin x) = 2\cos x$$

$$\frac{dv}{dx} = \frac{d}{dx}(-4x - 8) = -4$$

Finally:

$$\frac{d}{dx}(uv) = (-4x - 8)\cdot 2\cos x \ + 2\sin x \cdot (-4) = -8(x\cos x + 2\cos x + \sin x)$$

**Answer**: $\frac{d}{dx}(uv) = -8(x\cos x + 2\cos x + \sin x)$