

Compute the differentials

$$d(7u^9 + 34 - 5u^{-3})$$

and

$$d(\sin \theta \cos \theta)$$

Compute the differentials

$$d(7u^9 + 34 - 5u^{-3})$$

5/8/25

and

$$d(\sin \theta \cos \theta)$$

$$\begin{aligned} & d(7u^9 + 34 - 5u^{-3}) \\ &= 63u^8 du + 15u^{-4} du \end{aligned}$$

$$\begin{aligned} & d(\sin \theta \cos \theta) \\ &= d(\sin \theta) \cos \theta + \sin \theta d(\cos \theta) \\ &= \cos \theta d\theta \cos \theta + \sin \theta (-\sin \theta d\theta) \\ &= \cos^2 \theta d\theta - \sin^2 \theta d\theta \\ &= \cos 2\theta d\theta \end{aligned}$$