

1.) The derivative of $\ln \cos x$ is

Solutions

$$y = \ln \cos x$$

$$\frac{dy}{dx} = \frac{-\sin x}{\cos x} = -\tan x$$

Notes

$$d \ln u = \frac{du}{u}$$

2.)

Two bodies each having a mass of 450 milligrams are separated in space a distance of 10 km apart, what is the force exerted on each other due to gravitation?

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Solutions

$$F = G \frac{M_1 M_2}{d^2}$$

$$= 6.67 \times 10^{-11} \left[\frac{[450 \times 10^{-6}] [450 \times 10^{-6}]}{[10,000]^2} \right]$$

$$F = 1.35 \times 10^{-25}$$