Compute the differentials

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

and

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

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and

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

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

$= 63u^8\,du + 15u^{-4}\,du$

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

$= d(\sin\theta)\cos\theta + \sin\theta\, d(\cos\theta)$

$= \cos\theta\, d\theta \cos\theta + \sin\theta(-\sin\theta\, d\theta)$

$= \cos^2\theta\, d\theta - \sin^2\theta\, d\theta$

$= \cos 2\theta\, d\theta$