W2-11-1 The total differential of a function S 1

Consider the function $S = S(U, V) = -2U^3 - U^{-2} - 3V^5 + 8V$. Determine its total differential. dS = ...

$\mathrm{d}S = \left(\frac{\partial S}{\partial U}\right)_V \mathrm{d}U + \left(\frac{\partial S}{\partial V}\right)_U \mathrm{d}V = (-6U^2 + 2U^{-3})\mathrm{d}U + (-15V^4 + 8)\mathrm{d}V.$