PHASE 1 (PART 1): CRITICAL POINTS AND RELATIVE EXTREMA

1.] Find all the critical points of the following functions on the given intervals:

(a) $f(x) = 3x^4 + 8x^3 - 18x^2$ on $[-1, 2]$

(b) $g(x) = x^{1/3}(x-2)^2$ on $(-\infty, \infty)$

2.] Determine and classify all relative extrema of the the following functions:

(a) $f(x) = \dfrac{2}{3}x^3 + 4x^2 - 10x + \dfrac{5}{3}$

(b) $g(x) = x^2 e^{-x/2}$