Second Derivative Test for Extrema

Directions: If applicable, use the second derivative test to determine if any of the critical values for the following functions indicates a local maximum or local minimum.

1. $f(x) = \frac{x^3}{3} + \frac{5}{2}x^2 + 6x - 1$
2. $f(x) = (x-1)^{\frac{2}{3}}(x+4)$
3. $f(x) = x^4 - 5x^2$
4. $f(x) = x^5 - 3x^3$
5. $f(x) = \ln(x^3 - 3x)$