Additional Questions for Homework on Section 4.4.

For each of the following, find the critical points and then determine what the Second Derivative Test would conclude about the occurrence of local extrema at each critical point. Also determine what conclusions can you draw using the First Derivative Test.

A. $f(x) = 2x^3 - 15x^2 + 24x$ on $[0, 10]$

B. $g(x) = x^4 - 6x^2$

C. $h(x) = 4x^5 + 50x^4$

D. $f(x) = x^4 e^{2x}$

E. $g(x) = x \ln x$

F. $h(x) = x - 2 \sin x$ on $[0, 2\pi]$

G. $f(\theta) = 4 \cos \theta - \cos 2\theta, \quad -2\pi \leq \theta \leq 2\pi$