1. This problem concerns the function \( f(x) = e^{x^3 - 12x} \).

(a) Find the critical points of \( f(x) \).

(b) Find the intervals on which \( f(x) \) increases, and those on which it decreases.

(c) Find the locations (x-coordinates) of the local maxima, if any. Find the locations of the local minima, if any.

1. This problem concerns the function \( f(x) = 3x^4 + 4x^3 - 12x^2 + 2 \).

(a) Find the critical points of \( f(x) \).

(b) Find the intervals on which \( f(x) \) increases, and those on which it decreases.

(c) Find the locations (x-coordinates) of the local maxima, if any. Find the locations of the local minima, if any.
1. This problem concerns the function \( f(x) = \frac{3}{2}x^4 - x^6 \).

   (a) Find the critical points of \( f(x) \).

   (b) Find the intervals on which \( f(x) \) increases, and those on which it decreases.

   (c) Find the locations (x-coordinates) of the local maxima, if any. Find the locations of the local minima if any.