MAXIMA AND MINIMA

Instructions: Please write down answers in the most simplified form possible.

(1) (i) Graph the function $y = x^2 - 6x + 10$ for $1 \leq x \leq 4$, and (ii) find its absolute (global) extrema on this interval (if they exist).

(2) (i) Find all critical points of the function $f(x) = x^3(3x^2 - 5)$. (ii) Which of these critical points are local maxima/minima? (iii) Find the extreme values of $f(x)$ on the interval $[-2, 1]$.