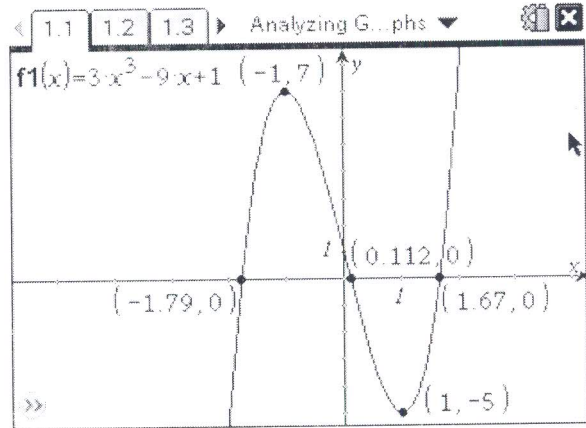
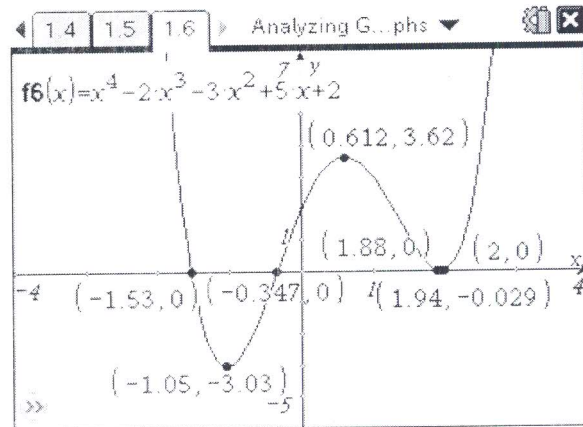


Using a graphing calculator, graph the following functions. For each function, determine intervals of increase and decrease, local maxima and minima, absolute maxima and minima, and zeros.

1. $f(x) = 3x^3 - 9x + 1$
 interval of increase: $(-\infty, -1) \cup (1, \infty)$
 interval of decrease: $(-1, 1)$
 local maxima: $(-1, 7)$
 local minima: $(1, -5)$
 absolute maxima: ∞
 absolute minima: $-\infty$
 zeros: $-1.8, 0.1, 1.7$



2. $f(x) = x^4 - 2x^3 - 3x^2 + 5x + 2$
 interval of increase: $(-1.05, 0.6) \cup (1.9, \infty)$
 interval of decrease: $(-\infty, -1.05) \cup (0.6, 1.9)$
 local maxima: $(0.6, 3.6)$
 local minima: $(-1.05, -3)$ $(1.9, -0.03)$
 absolute maxima: ∞
 absolute minima: $(-1.05, -3)$
 zeros: $-1.5, -0.3, 1.88, 1.94$



3. $f(x) = x^5 - 6x^3 + 9x$
 interval of increase: $(-\infty, -1.7) \cup (-0.8, 0.8) \cup (1.7, \infty)$
 interval of decrease: $(-1.7, -0.8) \cup (0.8, 1.7)$
 local maxima: $(-1.7, 0)$ $(0.8, 4.5)$
 local minima: $(-0.8, -4.5)$ $(1.7, 0)$
 absolute maxima: ∞
 absolute minima: $-\infty$
 zeros: $-1.7, 0, 1.7$

