1. Find the Newton form of the degree three polynomial \( p_3(x) \) that interpolates \((1, 5), (2, -2), (4, 2), \) and \((5, 1)\).

2. If the Newton form of the polynomial \( p_3(x) \) that interpolates \((1, 2), (2, 3), (3, f_2), \) and \((4, 5)\) is
   \[
   p_3(x) = 2 + (x-1) + m(x-1)(x-2) - (x-1)(x-2)(x-3)
   \]
   then what is the Newton form of the degree two polynomial \( q(x) \) that interpolates \((2, 3), (3, f_2), \) and \((4, 5)\)?

3. To find an approximation of the root of
   \[
   p(x) = 2x^3 + 3x - 1
   \]
   between \( x = 0 \) and \( x = 1 \) that is close to the exact root within \( \varepsilon = 10^{-6} \), how many iterations of the \textit{bisection method} should be performed?

4. If we use \textit{Newton Raphson method} to construct a sequence of points \( x_i, i = 0, 1, 2, \ldots \), for the polynomial
   \[
   p(x) = -25x^3 + 96x - 64
   \]
   with \( x_0 = 0 \), then what is the value of \( x_2 \)?