1. Divide $9x^3 - 6x^2 - 8x - 3$ by $3x + 2$ (Use long division).

2. Factor the polynomial $x^3 + 3x^2 - 10x - 24$ completely, knowing that $x - 3$ is a factor.

3. Use synthetic division to find $f(-2)$
   $f(x) = 3x^4 - 2x^2 + 1$

4. Find all real solutions $2x^3 + 5x^2 - x - 6 = 0$

5. Determine the number of rational and irrational zeroes of $f(x) = x^4 + 2x^3 + 7x^2 + 12x + 6$. 