TOPIC 11: Polynomials (Homework Problems):

Homework Problems:

1) Suppose that the roots of $x^3 + 3x^2 + 4x - 11 = 0$ are a, b and c, and that the roots of $x^3 + rx^2 + sx + t = 0$ are a+b, b+c and c+a. Find t.

2)
The polynomial $x^3 + px^2 + qx + r$ has one zero which is the sum of the two others. Find the relationship between p, q and r.

3)
The equation $P(x) = x^4 - 16x^3 + 94x^2 + px + q = 0$ has two double roots. Find p+q.

4)
Let P(x) be a polynomial with integral coefficients. If there exist integers a, b, c such that P(a) = P(b) = P(c) = -1 then P(x) has no integral roots.