Algebra 13: Long division

Example 1:

Find k if x = 2 is a factor of x3 + 6x2 + kx + 6.

Example 2:

X2 + ax + b is a factor of the polynomial x3 + qx2 + rx + s

Prove that r-b = a(q-a) and s = b(q-a)

Question1:

X – 2 is a factor of 2x3 + x2 – kx + 6. Find the value of k.

Question 2:

X2 – 2tx + t2 is a factor of x3 – 3px +c. Prove that:

1. P = -t2
2. C = 2t3

Question 3:

X2 – px + q is a factor of x3  +3px2 + 3qx +r.

1. Show that q = -2p2
2. Show that r = -8p3

Question 4:

X2- px +1 is a factor of ax2 + bx +c.

a≠0

Show that c2 = a(a-b)