

1.

$$f(x) = ax^3 + 10x^2 - 3ax - 4$$

Given that $(x - 1)$ is a factor of $f(x)$, find the value of the constant a .

You must make your method clear.

By Factor Theorem,

if $(x - 1)$ is a factor of $f(x)$ then $f(1) = 0$

$$a(1)^3 + 10(1)^2 - 3a(1) - 4 = 0 \quad (1 \text{ mark})$$

$$a + 10 - 3a - 4 = 0$$

$$-2a = -6$$

$$a = 3$$

(2 marks)