

7 In this question you must show detailed reasoning.

The function $f(x)$ is defined by $f(x) = x^3 + x^2 - 8x - 12$ for all values of x .

(a) Use the factor theorem to show that $(x + 2)$ is a factor of $f(x)$. **[2]**

(b) Solve the equation $f(x) = 0$. **[4]**