

5 Kaya is investigating the function

$$f(x) = 2x^3 - 7x^2 - 12x + 45$$

Kaya makes two statements.

Statement 1:  $f(3) = 0$

Statement 2: this shows that  $(x + 3)$  must be a factor of  $f(x)$ .

5 (a) State, with a reason, whether each of Kaya's statements is correct.

**[2 marks]**

5 (b) Fully factorise  $f(x)$ .

**[3 marks]**