The Factor Theorem

Examples

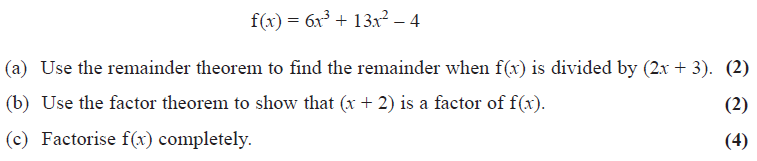
1. Show that is a factor of .

2. Fully factorise .

Using the factor theorem to find unknown coefficients:

1. Given that is a factor of , determine the value of .

Test your understanding



2. Given that is a factor of , determine the value of .

Extension

1. *[MAT 2006 1E]* The cubic has both and has factors. Determine the values of and .

2. [MAT 2009 1I] The polynomial has as a factor

1. for no values of ;
2. for only;
3. for only;
4. for and only.

The **remainder** **theorem** states that if is divided by , the remainder is . This similarly works whenever makes the divisor 0.

(No longer required for A Level)

3. [MAT 2013 1G] Let be an integer and be the polynomial

What is the remainder, in terms of , when is divided by ?

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