

5. (a) Find the remainder when  $6x^3 - 13x^2 + x + 2$  is divided by  $x + 3$ .

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[2]

(b) (i) Show that  $x - 2$  is a factor of  $6x^3 - 13x^2 + x + 2$ .

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[2]

(ii) Hence factorise  $6x^3 - 13x^2 + x + 2$ .

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[4]

June 2012

4. (a) Given that  $f(x) = x^3 - 2x^2 - 9x + 18$ , evaluate  $f(-3)$ .

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Write down what this tells you about  $f(x)$ .

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[3]

- (b) Factorise  $x^3 - 2x^2 - 9x + 18$ .

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[4]

June 2013

8. (a) Find the remainder when  $7x^3 - 4x^2 + x - 2$  is divided by  $x - 2$ .

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(b) (i) Show that  $x + 3$  is a factor of  $x^3 + 4x^2 - 17x - 60$ .

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(ii) Hence, factorise  $x^3 + 4x^2 - 17x - 60$ .

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