Algebraic Methods - Edexcel Past Exam Questions

1. (*a*) Use the factor theorem to show that $(x + 4)$ is a factor of $2x^3 + x^2 - 25x + 12$. **(2)**

(*b*) Factorise $2x^3 + x^2 - 25x + 12$ completely. **(4)**

June 05 Q3

---

2. $f(x) = 2x^3 + x^2 - 5x + c$, where c is a constant.

Given that $f(1) = 0$,

(*a*) find the value of c, **(2)**

(*b*) factorise $f(x)$ completely, **(4)**

(*c*) find the remainder when $f(x)$ is divided by $(2x - 3)$. **(2)**

Jan 06 Q1

---

3. $f(x) = 2x^3 + 3x^2 - 29x - 60$.

(*a*) Find the remainder when $f(x)$ is divided by $(x + 2)$. **(2)**

(*b*) Use the factor theorem to show that $(x + 3)$ is a factor of $f(x)$. **(2)**

(*c*) Factorise $f(x)$ completely. **(4)**

June 06 Q4

---

4. $f(x) = x^3 + 4x^2 + x - 6$.

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

(*b*) Factorise $f(x)$ completely. **(4)**

(*c*) Write down all the solutions to the equation

$$x^3 + 4x^2 + x - 6 = 0.$$ **(1)**

Jan 07 Q5

---

5. $f(x) = 3x^3 - 5x^2 - 16x + 12$.

(*a*) Find the remainder when f(x) is divided by ($x - 2$). **(2)**

Given that ($x + 2$) is a factor of f(x),

(*a*) factorise f(x) completely. **(4)**

June 07 Q2

---

6. $f(x) = 2x^3 - 3x^2 - 39x + 20$

(*a*) Use the factor theorem to show that ($x + 4$) is a factor of f (x). **(2)**

(*b*) Factorise f (x) completely. **(4)**

June 08 Q1

---

7. $f(x) = 3x^3 - 5x^2 - 58x + 40$.

(*a*) Find the remainder when f (x) is divided by ($x - 3$) . **(2)**

Given that ($x - 5$) is a factor of f(x) ,

(*b*) find all the solutions of f(x) = 0 . **(5)**

June 10 Q2

---

8. $f(x) = 2x^3 - 7x^2 - 5x + 4$

(*a*) Use the factor theorem to show that ($x + 1$) is a factor of f(x). **(2)**

(*b*) Factorise f(x) completely. **(4)**

June 11 Q1
