# TB(3A) Ch. 1 More about Factorization of Polynomials
## Conventional Questions

**1. [13-14 S.2 Mid-year Exam #8]**

**(a)** Factorize $2x^2 - 26xy + 72y^2$. **(2 marks)**

**(b)** Hence factorize $2(x+1)^2 - 26(x+1)(x+2) + 72(x+2)^2$. **(2 marks)**

**2. [14-15 S.4 Mid-year Exam #1]**

**(a)** Factorize $x^2 - 36y^2$. **(1 mark)**

**(b)** Factorize $x^2 - 36y^2 + 2x^3y^2 - 12x^2y^3$. **(2 marks)**

**3. [14-15 S.2 Mid-year Exam]**

**(a)** Factorize $4x^2 + 10xy + 4y^2$. **(2 marks)**

**(b)** Hence, or otherwise, factorize $4(w+1)^2 + 10(w^2-1) + 4(w-1)^2$. **(2 marks)**

**4. [14-15 S.2 Mid-year Exam]**

**(a)** Factorize $8a^3 - 125b^3$. **(1 mark)**

**(b)** Hence, or otherwise, factorize $8(x+y)^3 - 125(x-y)^3$. **(2 marks)**

**5. [15-16 S.2 Mid-year Exam]**

**(a)** Factorize $y^3 - 64$. **(1 mark)**

**(b)** Factorize $3x^2 - 14x + 8$. **(1 mark)**

**(c)** Hence, or otherwise, factorize $w^6 + 3w^4 - 14w^2 - 56$. **(3 marks)**

**6. [15-16 S.4 Mid-year Exam]**

**(a)** Factorize $a^2 - 18a + 72$. **(1 mark)**

**(b)** Hence, factorize $(y^2 - y)^2 - 18(y^2 - y) + 72$. **(2 marks)**

**7. [16-17 S.2 Mid-year Exam #5]**

**(a)** Factorize **(i)** $16 - 8x + x^2$, **(1 mark)**

**(ii)** $16 - x^2$. **(1 mark)**

**(b)** Hence, factorize $2\left(16 - 8x + x^2\right) - 3\left(16 - x^2\right)$. **(3 marks)**

**8. [16-17 S.2 Mid-year Exam #6]**

**(a)** Factorize **(i)** $4x^2 + 5x - 9$, **(1 mark)**

**(ii)** $x^3 - 1$. **(1 mark)**

**(b)** Hence, factorize $x^3 + 4x^2 + 5x - 10$. **(2 marks)**

**9. [16-17 S.2 Mid-year Exam #11]**

Factorize $8x^3 - 36x^2y + 54xy^2 - 27y^3$. **(3 marks)**

**10. [16-17 S.2 Final Exam #2]**

**(a)** Factorize $x^2 - x - 2$. **(1 mark)**

**(b)** Simplify $\frac{(x-1)^2}{x(x+1)} \times \frac{x}{x-1}$. **(1 mark)**

**(c)** Simplify $\frac{x+1}{x-1} - \frac{x-1}{x+1}$. **(2 marks)**

**11. [17-18 S.3 Mid-year Exam #1]**

**(a) (i)** Factorize $a^2 - 4a - 21$. **(1 mark)**

**(ii)** Factorize $a^3 - 343$. **(1 mark)**

**(b)** Hence, or otherwise, factorize $a^3 + a^2 - 4a - 364$. **(2 marks)**

**12. [17-18 S.3 Mid-year Exam #2]**

Prove that $\frac{2a^2 + 3a - 2}{2a - 1} \equiv \frac{a^2 + a - 2}{a - 1}$, where $a \neq 1$ and $a \neq \frac{1}{2}$. **(3 marks)**

**13. [17-18 S.3 S Test 2 #2]**

**(a)** Factorize $2a^2 - 5a - 3$. **(1 mark)**

**(b)** Factorize $2a^2 - 5a - 3 - b^2a + 3b^2$. **(1 mark)**

**14. [17-18 S3 Final Exam, 1]**

**(a)** Factorize $6x^2 + 11x - 7$. **(1 mark)**

**(b)** Factorize $8x^3 + 6x^2 + 11x - 8$. **(1 mark)**

**15. [17-18 S4 Final Exam, 2]**

Factorize

**(a)** $p^2 + p - 12$,

**(b)** $p^2 + p - 12 - qp + 3q$. **(3 marks)**

**~ End ~**