

ALGEBRA (Q 1 & 2, PAPER 1)

LESSON NO. 3: FACTOR THEOREM

2006

1 (b) $f(x) = 3x^3 + mx^2 - 17x + n$, where m and n are constants. Given that $x - 3$ and $x + 2$ are factors of $f(x)$, find the value of m and the value of n .

2004

1 (b) (i) Let $f(x) = x^3 + kx^2 - 4x - 12$, where k is a constant. Given that $x + 3$ is a factor of $f(x)$, find the value of k .

2003

1 (b) (i) $f(x) = ax^2 + bx + c$ where $a, b, c \in \mathbf{R}$. Given that k is a real number such that $f(k) = 0$, prove that $x - k$ is a factor of $f(x)$.

(ii) Show that $2x - \sqrt{3}$ is a factor of $4x^2 - 2(1 + \sqrt{3})x + \sqrt{3}$ and find the other factor.

2001

1 (b) Let $f(x) = 2x^3 + mx^2 + nx + 2$ where m and n are constants. Given that $x - 1$ and $x + 2$ are factors of $f(x)$, find the value of m and the value of n .

ANSWERS

2006 1 (b) $m = -4, n = 6$

2004 1 (b) (i) $k = 3$

2003 1 (b) (ii) $(2x - 1)$

2001 1 (b) $m = 1, n = -5$