



MATHS

BOOKS - RESONANCE DPP ENGLISH

DETERMINANTS

Others

1. If $f(\theta) = \begin{vmatrix} \cos^2 \theta & \cos \theta \sin \theta & -\sin \theta \\ \cos \theta \sin \theta & \sin^2 \theta & \cos \theta \\ \sin \theta & -\cos \theta & 0 \end{vmatrix}$, there

$$f\left(\frac{\pi}{3}\right) + f\left(\frac{2\pi}{3}\right) + f(\pi) + f\left(\frac{4\pi}{3}\right) + \dots + f\left(\frac{n\pi}{3}\right)$$

is equal to

(a) n (b) $\frac{n(n+1)}{2}$ (c) $n^2 + 2n$ (d) $2n^2 - n$



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2. If

$$|0ab^2ac^2a^2b0bc^2a^2ccb^20| = 2a^p b^q c^r, \text{ then } p + q + r + 10$$

is equal to 27 (b) 18 (c) 19 (d) 8



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3. The number of values of k for which the linear equations

$$4x + ky + 2z = 0$$

$$kx + 4y + z = 0$$

$$2x + 2y + z = 0$$

possess a non-zero solution is



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4. The number of distinct real roots of $|\sin x \cos x \cos x \cos x \sin x \cos x \cos x \cos x \sin x| = 0$ in the interval $-\frac{\pi}{4} \leq x \leq \frac{\pi}{4}$ is 0 (b) 2 (c) 1 (d) 3



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