

JEE MAIN THREE DIMENSIONAL GEOMETRY — ANGLE BETWEEN TWO LINES — PYQS

Max. Marks: 12
Questions: 3

Section A (MCQ) — 3 questions

Q.1 Let a line L be perpendicular to both the lines

$$L_1: \frac{x+1}{3} = \frac{y+3}{5} = \frac{z+5}{7} \text{ and}$$

$$L_2: \frac{x-2}{1} = \frac{y-4}{4} = \frac{z-6}{7}. \text{ If } \theta \text{ is the acute angle}$$

$$\text{between the lines } L \text{ and } L_3: \frac{x-\frac{8}{2}}{2} = \frac{y-\frac{4}{1}}{1} = \frac{z}{2}, \text{ then}$$

$\tan \theta$ is equal to :

[JEE Main 2026 (Online) 6th April Morning Shift]

(1) $\frac{3}{2}\sqrt{2}$ (2) $\frac{5}{2}\sqrt{2}$ (3) $\frac{5}{3}\sqrt{2}$ (4) $\frac{4}{3}\sqrt{2}$

Scan or tap for the full solution



Q.2 Let the direction cosines of two lines satisfy the equations : $4l + m - n = 0$ and $2mn + 10nl + 3lm = 0$.

Then the cosine of the acute angle between these lines is :

[JEE Main 2026 (Online) 23rd January Morning Shift]

(1) $\frac{10}{7\sqrt{38}}$ (2) $\frac{10}{\sqrt{38}}$ (3) $\frac{10}{3\sqrt{38}}$ (4) $\frac{20}{3\sqrt{38}}$

Scan or tap for the full solution



Q.3 Let A be the point of intersection of the lines

$$L_1: \frac{x-7}{1} = \frac{y-5}{0} = \frac{z-3}{-1} \text{ and}$$

$$L_2: \frac{x-1}{3} = \frac{y+3}{4} = \frac{z+7}{5}. \text{ Let } B \text{ and } C \text{ be the points}$$

on the lines L_1 and L_2 respectively such that $AB = AC = \sqrt{15}$. Then the square of the area of the triangle ABC is :

[JEE Main 2025 (Online) 4th April Evening Shift]

(1) 63 (2) 57 (3) 60 (4) 54

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3								
Ans.	2	3	4								