



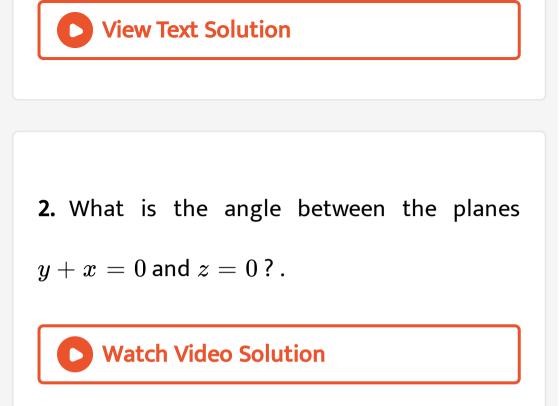
MATHS

BOOKS - MODERN PUBLICATION

THREE DIMENSIONAL GEOMETRY



1. Write what are the direction cosines of the straight line normal to the plane 2x + y + 2z + 8 = 0.



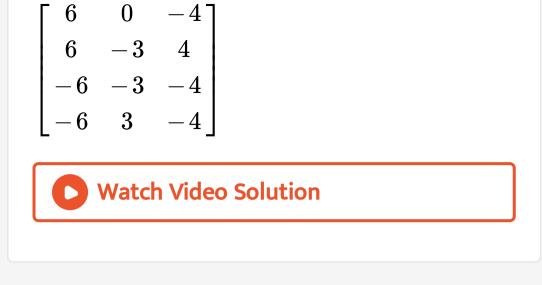
3. If the line
$$\frac{x-3}{2} = \frac{y+k}{-1} = \frac{z+1}{-5}$$
 lies on
the plane 2x-y+z-7 = 0,
then k = -(2, $-1, -2$)

4. Fill in the blanks in the length of the projection of the line segment joining (1,3,-1) and (3,2,4) on z-axis is _____.

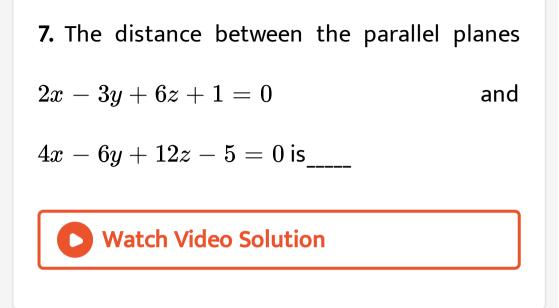
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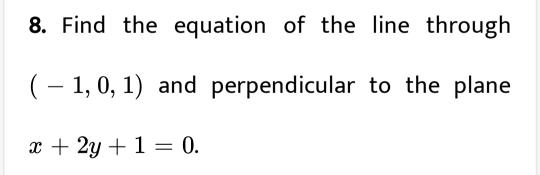
5. The image of the point (6,3,-4) with respect

to yz-plane is _____.



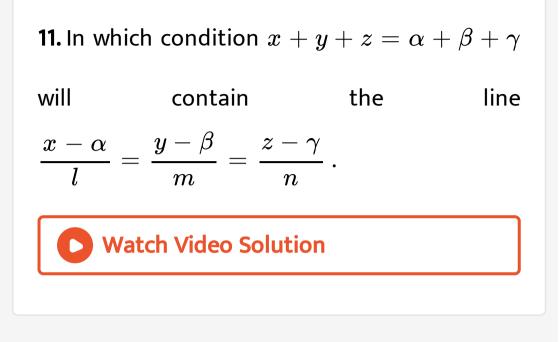
6. The equation of a plane passing through (1,1,2) and parallel to x+y+z-1=0 is____

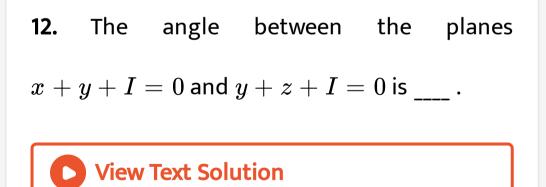




9. If the line $\frac{x-3}{2} = \frac{y+k}{-1} = \frac{z+1}{-5}$ lies on the plane 2x-y+z-7 = 0, then k = -(2, -1, -2) Watch Video Solution

10. Find the equation of the plane passing through (3,-6,-9) and parallel to xz plane





13. To which coordinate axis the line x = 1and y = 2 is parallel.

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14. Find the number of points (x, y, z) in space other than the point (1,-2, 3), such that |x| = 1, |y| = 2 and |z|= 3.

15. Write the ratio in which the line segment Joining the points (1, 2, -2) and (4, 3, 4) is divided by the xy— $pla \neq .$

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16. What is the distant of the point (4,5,-3) from the $y - a\xi s$?

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17. Find the equation of the plane Paralel to the plane 2x - y + 3z + 1 = 0 and at a distance 3 units away from it.

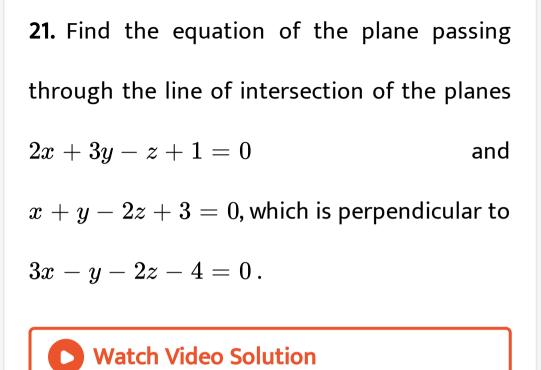


18. Find the equation of the plane passing through the line of intersection of the planes. x + 3y + 6 = 0, 3x - y - 4z = 0 and the point (1,1,1).

19. Bisecting the line segment joining (-1, 4, 3) and (5, -2, -1) at right angles.

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20. If P (1, y, z) lies on the line through (3, 2, -1) and (-4, 6, 3) find y & z.



22. Find the equation of the plane .Passing through the point (2, 3 - 1) and parallel to the plane 3x - 4y + 7z = 0.



23. Bisecting the line segment joining (-1, 4, 3) and (5, -2, -1) at right angles.

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24. Find the equation of the plane Paralel to

the plane 2x-y+3z+1=0 and at a

distance 3 units away from it.

25. Writing the equation of the plane 3x - 2y + z + 2 = 0 in normal form find its distance from origin.



26. A variable plane moves in such a way that the sum of the reciprocals of its intercepts on co-ordinate axes is constant. Show that the plane passes through a fixed point.

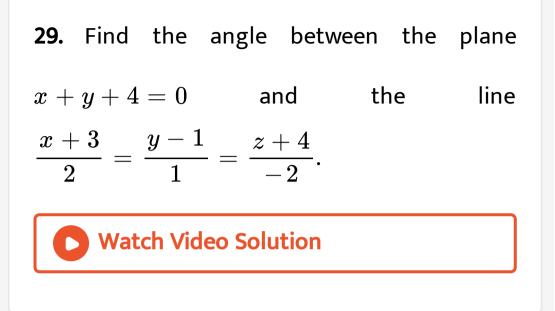


27. In each of the following case, verift whether the four given points are coplanar or not. (1, 1, 1), (3, 1, 2), (1, 4, 0), (-1, 1, 0)

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28. Find the points of intersection of the line

 $rac{x-1}{1}=rac{y+2}{3}=rac{z-1}{-1}$ and the plane 2x+y+z=9.



30. If the edges of a rectangular parallelopiped

are of lengths a, b, c, then the angle between

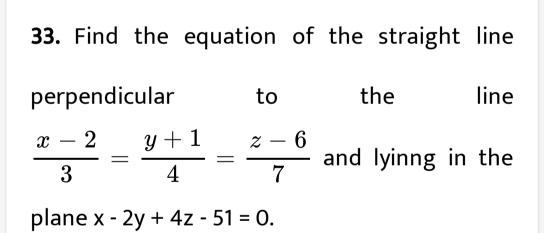
four diagonals are
$$\cos^{-1}igg(rac{\pm a^2\pm b^2\pm c^2}{a^2+b^2+c^2}igg).$$

31. Find the equation of the bisector planes of the angles between the planes 2x - y + 2z + 3 = 0 and 3x - 2y + 6z + 8 = 0 and specify the plane which bisects "the acute angle and the plane which bisects the obtuse angle.

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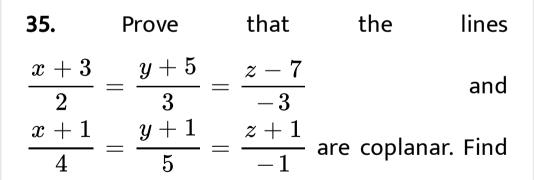
32. A variable plane meets the coordinate axes at P, Q, R points. If the plane passes through a fixed point (a, b, c), prove that the centre of

the shpere passing the origin and P, Q, R will lie on the surface $\frac{a}{x} + \frac{b}{y} + \frac{c}{z} = 2$ Watch Video Solution



34. Find the distance of the point (1, -2, 3) from the plane x - y + z = 5, measured parallel to the line $\frac{x}{2} = \frac{y}{3} = \frac{z}{-6}$

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the equation of plane containing them.

36. Find the equation of the image of the line $\frac{x-1}{2} = (y+2) = (z-1)$ on the plane 2x - y + z + 1 = 0.

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37. Find the shortest distance between the

lines	$x-8$ _	$y+9$ _	z-10	and
	3	-16 –	7	
x-15	- $y-29$	z-5		
3	8	5.		

38. Find the equation of the straight line perpendicular to the line $\frac{x-2}{3} = \frac{y+1}{4} = \frac{z-6}{7}$ and lyinng in the plane x - 2y + 4z - 51 = 0.

