1. If P(1, 5, 4) and Q(4, 1, 2), find the direction ratios of PQ. Answer: 3, -4, -6

2. The equations of a line are 5x-3= 15y+7=3- 10z. Write the direction cosines of the line. Answer:

3. Find the vector projection and its magnitude of r = (-3, 6, 1) on w = (2,3,4). Answer:

4. What is the cross product of the vectors 3i + 4j - 5k and -i +j – 2k. Answer:

5. The Cartesian equation of the plane r dot (3î+j+6k) = 8 is 3x + y + 6z - 8 = 0. True or False?

6. Vector A, 5m long, and vector B, 19m long, cannot have a resultant vector of what. Answer: The maximum is 24 (if they act in the same direction) and the minimum is 14 (if they act in opposite directions). It can therefore never be less than 14 or more than 24

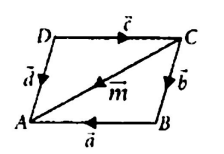
7. Distance of plane F. (2î + 3î − 6k) + 2 = 0, from - origin is what? Answer:

8.

9. If a and b are two unit vectors inclined to x-axis at angles 30° and 120° respectively, then equals what.

10. Find the values of x, y and z for which the two vectors: a = xî - 2j+5k and b = î+yj-zk are collinear. Answer: x =

11. Which of the following represents collinear but not equal vectors?



Answer: a, c

12. The dot product of a vector with the vectors î+j-3k, î+3j - 2k and 2î+j+4k and 8 respectively. Find the vector. Are 0, 5

13. The vector î+xĵ+3k is rotated through an angle è and xj doubled in magnitude, then it becomes 4î + (4x-2)î + 2k. What is the value of x?

14. Let a, b and c be vectors with magnitudes 3, 4 and 5 respectively and a + b + c = 0, then the values of a.b + b.c + c.a is Answer: -25

15. a, b, c are three vectors, such that a + b + c = 0, |a|= 1, |b|=2, |c|= 3, then a.b + b.c + c is equal to Answer: -7