



INDIAN SCHOOL NIZWA - WORKSHEET

PHYSICS

CH: 4 MOTION IN A PLANE

Name: _____

Date: _____

Class: XI Sec: _A_

1. The angle between two vectors of equal magnitude is 120° . Prove that the magnitude of their resultant is equal to either of them.
2. Two forces of 30N and 40N are inclined to each other by 60° . Find their resultant. What will be the angle if the forces are inclined at right angles to each other?
3. The resultant of two equal forces acting at right angles to each other is 1414N. Find the magnitude of each force.
4. A particle has a displacement of 12 m towards east and 5m towards north and then 6m vertically upward. Find the magnitude of the resultant displacement.
5. A river 1km wide is flowing at 3km /h. A swimmer whose velocity in still water is 4Km/h can swim only for 15 minutes. In what direction should he strike out in order to reach the other bank? What is the total distance covered?
6. Two vectors are given as $A = (3i + 9j - 6k)$ and $B = (8i + 4j + 8k)$. Find $A + B$.
7. Given $A = (2i + 3j + 4k)$ and $B = (3i - 4j + k)$. Find the angle between A and B.
8. The position vector of a particle at $t = 0$ is $r_1 = -3i + 2j$ and the later at $t = t$, it is $r_2 = 9i + 2j$. What is the displacement?
9. A ball is thrown with a speed of 17m/s at a projection angle of 58° above the horizontal. Determine (i) the time of maximum height (ii) the maximum height above the release point.
10. A grass hopper can jump a maximum horizontal distance of 1m. If it spends minimum time on the ground, what is the speed of travel along the road?