

Question

- **Displacement is a vector quantity**
- **Distance is scalar & time is scalar also**
- **Speed is scalar quantity & velocity is vector**
- **Velocity is a vector quantity (direction + speed)**

Key note

NOTE: An object can be moving in a straight line but not in the same direction. For eg. the ball thrown up from the ground and comes back down. It is moving upwards from the ground and returns to the ground by its downward direction.

Q. A person walks 300m North and then turns to walk 400m East. What distance does he walk and what is his displacement?

Answer: Distance & Displacement

- **Distance = 300m + 400m = 700m**
- **The path is straight in North & then straight East. So, the distance is 700m.**
- **The displacement is 500m.**
- **The path is straight & East. So, the displacement is 400m as well as representing it by the North and South direction.**
- **Displacement is a vector quantity (direction + speed).**
- **The total distance is 700m and the displacement is 400m. So, the displacement is less than the distance. It is because of the fact that it is a vector quantity & distance is scalar.**

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