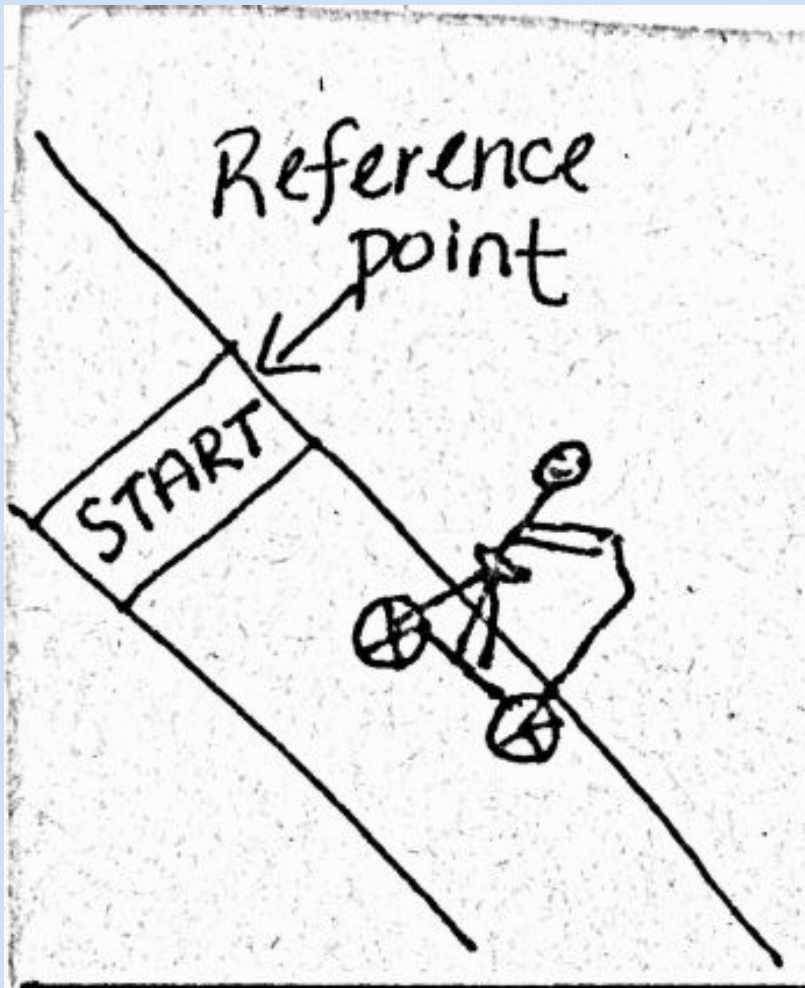# P.1.1 Motion Notes

By: Terry Dugger
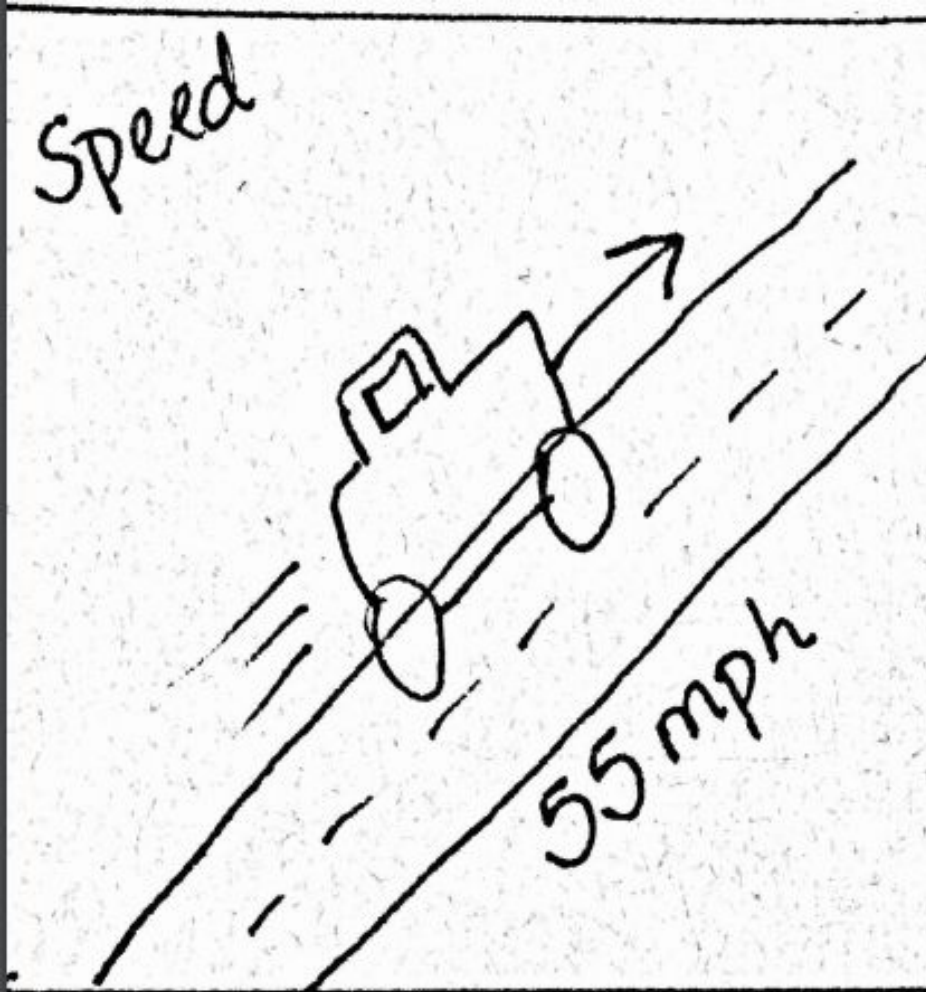
Reference Point

An object in relation to another object that appears to stay in place.

Motion

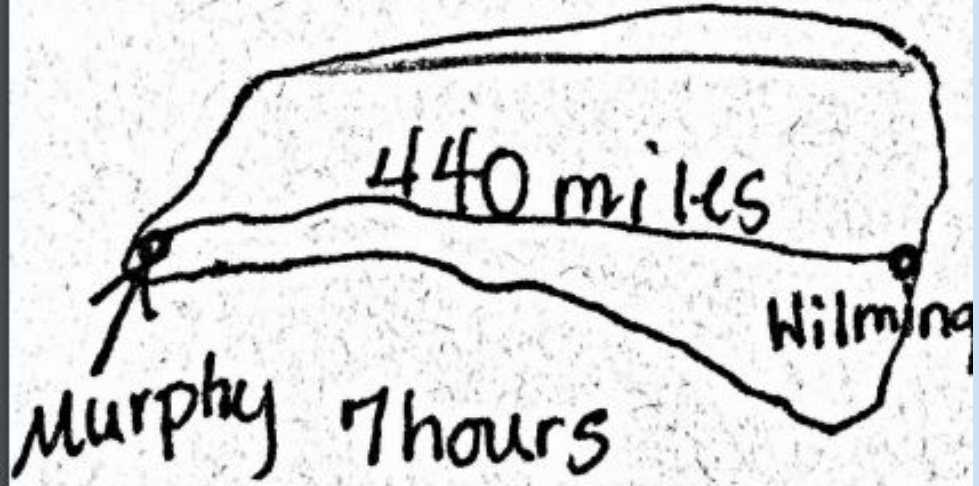An object's change in position relative to a reference point.

Speed

The distance traveled divided by the time of the motion.

Speed = distance / time

Average speed

The total distance divided by the total time.

r = D/t

r = 440/7 = 63 mph

Speed determines "how fast an object is moving". It is measured as distance travelled per unit of time.

Speed $= \dfrac{\text{Distance}}{\text{Time}}$

Average speed $= \dfrac{\text{Total distance}}{\text{Total Time}}$

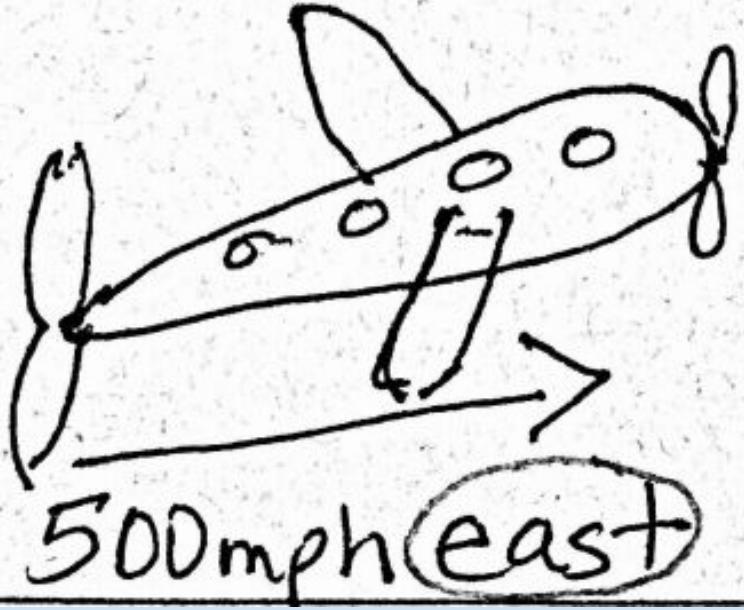Distance $=$ Speed $\times$ Time

Time $= \dfrac{\text{Distance}}{\text{Speed}}$

Velocity

The speed of an object in a particular direction.

Speed + direction

Speed vs Velocity

1. 55 mph
2. 20 mph west
3. The plane traveled 600 mph west.

1. Speed
2. Velocity
3. Velocity

Resultant Velocity

When the velocity of 2 different objects are combined.

Same direction: add velocities

Opposite direction: subtract velocities

Resultant Velocity

1. The plane is going 600 mph east and the wind is going 200 mph west.
2. A boat is going 12 mph downstream and the water is going 3 mph downstream.
3. The plane traveled 300 mph west and the wind is going 100 mph west.

1. 600 - 200 = 400 east
2. 12 + 3 = 15 downstream
3. 300 + 100 = 400 mph west

Centripetal Acceleration

Acceleration that occurs in a circular motion.

THE END

Parent comments -