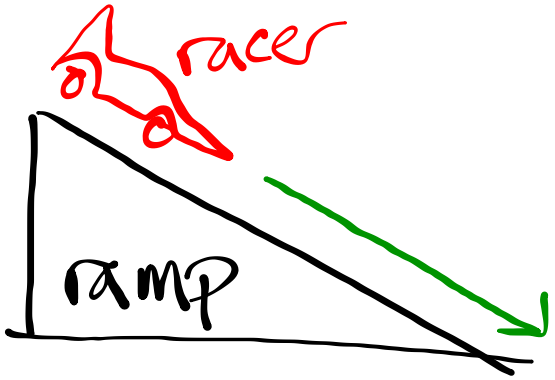
Speed and Velocity:

$\frac{\text{distance}}{\text{time}}$ = $\frac{\text{the total length of the path an object takes}}{\text{time}}$ = speed

$\frac{\text{displacement}}{\text{time}}$ = $\frac{\text{the shortest length between where an object starts \& stops WITH DIRECTION}}{\text{time}}$ = velocity

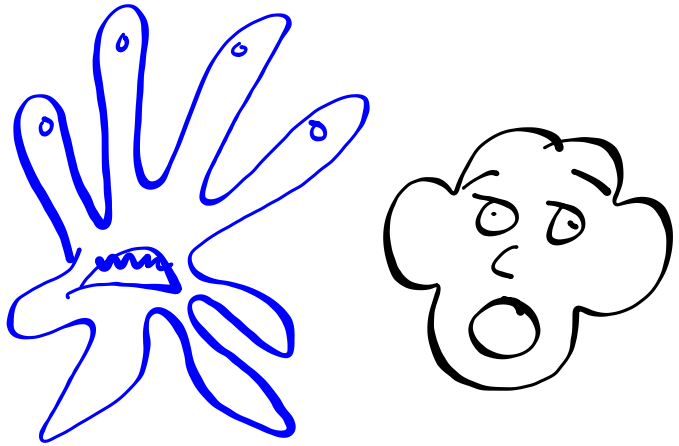


displacement of derby racer: the difference in position from top to the bottom of the ramp

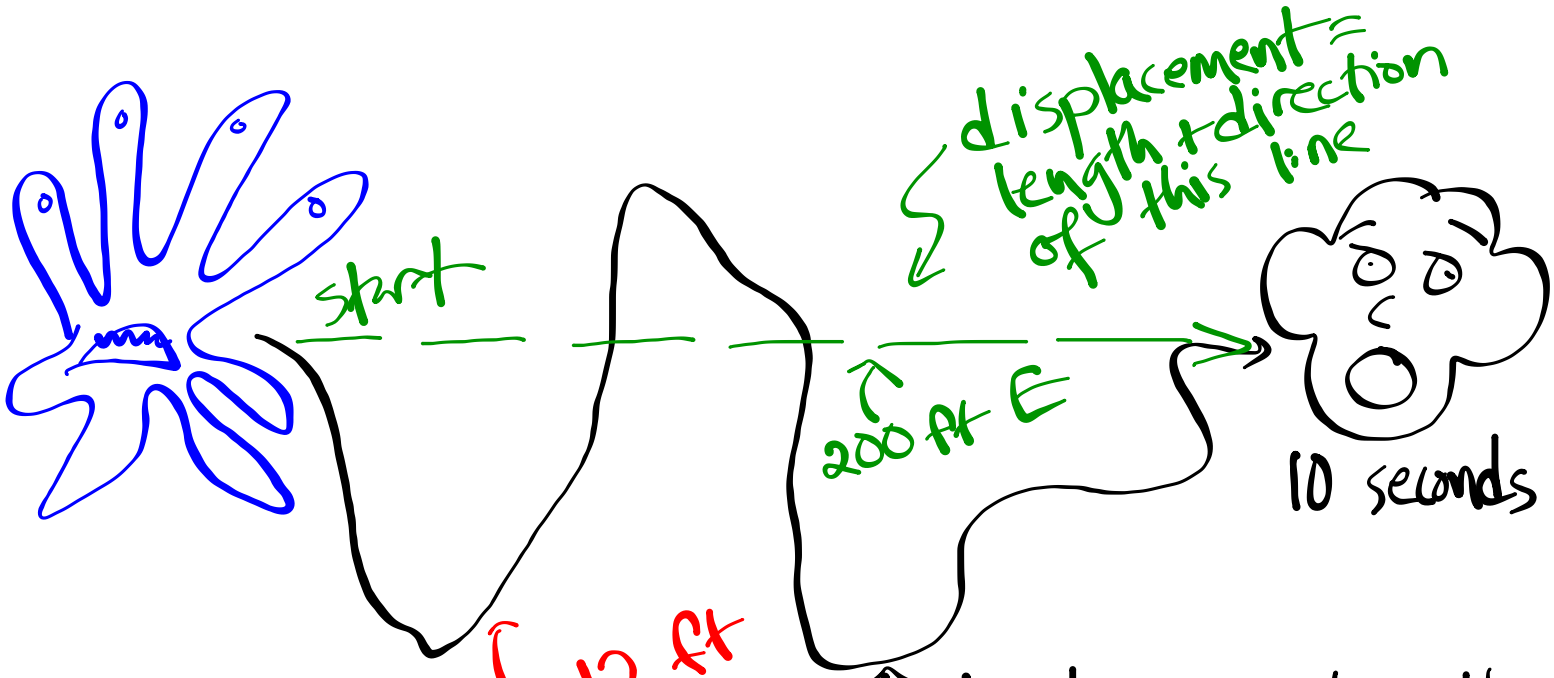
What is the velocity of racer?

$$v = \frac{\text{length of the ramp}}{\text{time}}$$

If an object moves in a straight line,
distance = displacement and speed = velocity



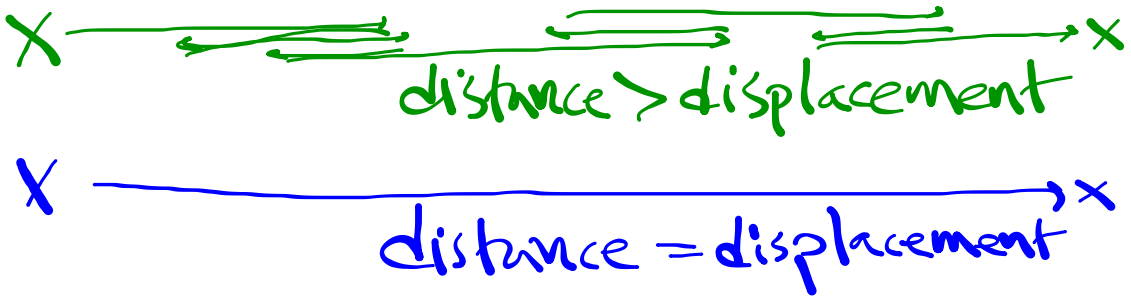
distance = displacement
speed = velocity



$$\text{speed} = \frac{312\text{ ft}}{10\text{ s}} = 31.2\ \frac{\text{ft}}{\text{s}}$$

$$\text{velocity} = \frac{200\text{ ft E}}{10\text{ s}} = 20\ \frac{\text{ft}}{\text{s}}\ \text{E}$$

One dimensional motion (back & forth in a straight line) is when displacement is more useful:



TODAY:

- Finish top/side views of racer in AutoCAD (dimension!)
- Goal for Tuesday
  - Safety contract ✓
  - Safety test ✓
  - Safety glasses ✓
  - AutoCAD drawing ✓

} Start work in shop