2nd Law of Motion

Force = Mass x Acceleration (F=MA)

$a = 1$ m/s^2

$F = 1$ N

$m = 1$ kg

- Force is measured in Newtons (N)

- Mass is measured in kilograms (kg)

- Acceleration is measured in meters per second squared (m/s^2)

Calculating Distance, Speed, and Time

A   B

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

Distance

Speed   Time

Distance=

Distance

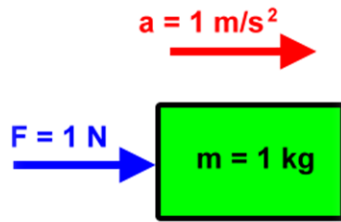Speed   Time

Speed=

Distance

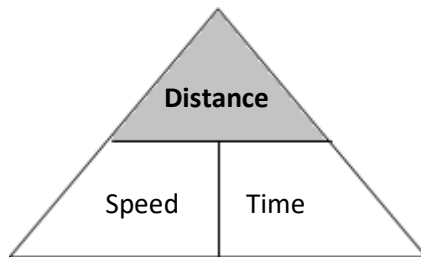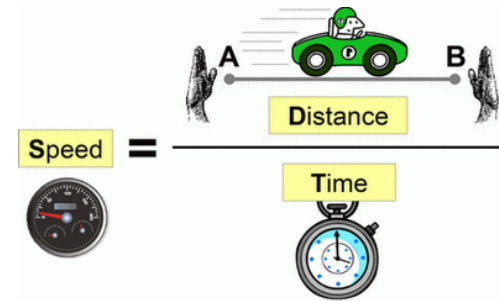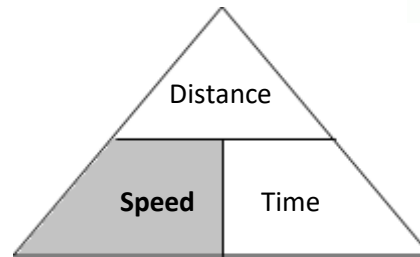Speed   Time

Time=

2nd Law of Motion

Force = Mass x Acceleration (F=MA)

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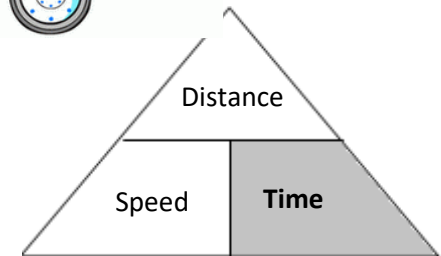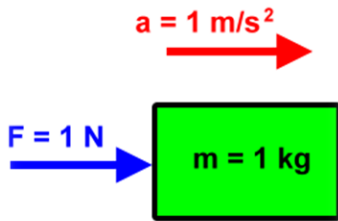- Acceleration is measured in meters per second squared (m/s^2)

Practice Problems

Give the equation used for each problem and show all work.

1. What net force is required to accelerate a car at a rate of 2 m/s2 if the car has a mass of 3,000 kg?

F=_____

m=_____

a= _____

2. A10 kg bowling ball would require what force to accelerate down an alleyway at a rate of 3 m/s2 ?

F=_____

m=_____

a=_____

3. Sally has a car that accelerates at 5 m/s2. If the car has a mass of 1000 kg, how much force does the car produce?

F=_____

m=_____

a=_____

4. What is the mass of a falling rock if it produces a force of 147 N?

F=_____

m=_____

a=_____

5. What is the mass of a truck if it produces a force of 14,000 N while accelerating at a rate of 5 m/s2 ?

F=_____

m=_____

a=_____