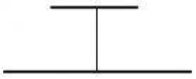
NAME:_____ DATE:_____

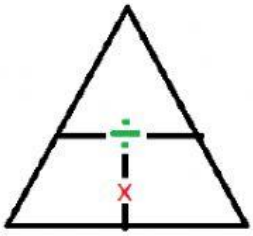
Momentum

Momentum can be calculated using this equation: Momentum = ... x .....

The units of momentum are kgm/s.

Complete the transposition triangle below using the letters **m , v, p.**





1. Calculate the momentum of

   a) An athlete of mass 60 kg running at a velocity of 10 m/s.

   Momentum = Mass x Velocity

   =_____kg x _____ m/s

   = _____ kgm/s

   b) A ship of mass 200,000 kg traveling at a velocity of 5 m/s.

   Momentum = Mass x Velocity

   =_____kg x _____ m/s

   = _____ kgm/s

   c) A rocket of mass 650 000 kg traveling at a velocity of 2 km/s.

   Momentum = Mass x Velocity

   =_____kg x _____ m/s

   = _____ kgm/s

   d) A mouse of mass 500g scuttling through the grass at 3m/s.

   Momentum = Mass x Velocity

   =_____g x _____ m/s

   = _____ gm/s

2. An athlete running at 8m/s has a momentum of 520kgm/s. What is her mass?

Mass = Momentum / Velocity

=_____kgm/s / _____ m/s

= _____ kg

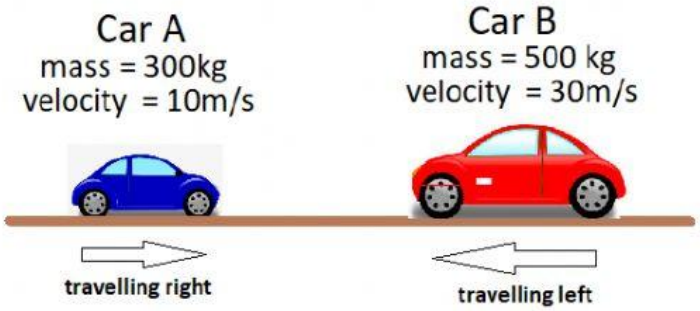
3. A model airplane traveling through the sky mass of 12kg and a momentum of 360kgm/s. Calculate the velocity of the plane.

Velocity = Momentum / Mass

=_____kgm/s / _____ kg

= _____ m/s

4. Calculate the momentums of the cars below.



Car A Momentum = Mass x Velocity	Car B Momentum = Mass x Velocity
=_____kg x _____ m/s	=_____kg x _____ m/s
= _____ kgm/s	= _____ kgm/s

a. The two cars collide and stick together. What type of collision is this?_____

b. Stuck together, in which direction will the two cars travel, after they collide?_____