CP Physics: Linear Momentum Worksheet I Name: _____

/ 36 Date Due: _____

Linear Momentum:

The momentum of this snowball increases because two factors increase as it rolls down the hill. What do you think the two factors are?

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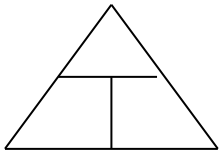
……

Momentum can be calculated using this equation:

Momentum = …… x …….



The units of momentum are …….

Questions

Calculate the momentum of

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

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b) A car of mass 800 kg traveling at a velocity of 30 m/s.

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c) A ship of mass 20000000kg traveling at a velocity of 5 m/s.

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d) A plane of mass 80 000 kg traveling at a velocity of 300 m/s.

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e) A rocket of mass 100 000 kg traveling at a velocity of 2000 m/s.

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f) A football of mass 500g traveling at a velocity of10m/s.

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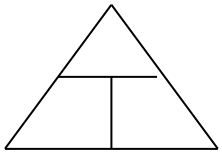

Questions

1. Calculate the momentum of

   a) An athlete of mass 70 kg running at a velocity of 8 m/s.

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   g) A ship of mass 20 million kg traveling at a velocity of 5 m/s.

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   h) A rocket of mass 100 000 kg traveling at a velocity of 2 km/s.

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

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

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3. A meteor traveling through space has a mass of 3×10^6kg and a momentum of 6×10^8kgm/s. Calculate the velocity of the meteor.

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