

Momentum Problems WS

Instructions: Complete the following problems using the equation below. SHOW ALL WORK. No work = no credit. Do not forget your units.

Momentum Formula

$$\text{Momentum} = \text{Mass} \times \text{Velocity}$$

1. How much momentum does a 25 kg mass moving at 25 m/s have?

Momentum = _____

Mass = _____

Velocity = _____

2. How much momentum does a stationary 5500 kg mass have?

Momentum = _____

Mass = _____

Velocity = _____

3. What is the velocity of a 5.5 kg object that has a momentum of 550 kg • m/s?

Momentum = _____

Mass = _____

Velocity = _____

4. Compare the momentums of a 50 kg dolphin swimming at 16.4 m/s and a 4100 kg elephant walking 0.20 m/s.

Dolphin Momentum = _____

Dolphin Mass = _____

Dolphin Velocity = _____

Elephant Momentum = _____

Elephant Mass = _____

Elephant Velocity = _____

5. A steel ball whose mass is 2.0 kg is rolling at a rate of 2.8 m/s. What is its momentum?

Momentum = _____

Mass = _____

Velocity = _____

6. A marble is rolling at a velocity of 1.5 m/s with a momentum of 0.10 kg • m/s. What is its mass?

Momentum = _____

Mass = _____

Velocity = _____

7. Calculate the momentum of a 11.35kg wagon rolling down a hill at 12m/s.

Momentum = _____

Mass = _____

Velocity = _____

8. Calculate the momentum of a 0.15 kg ball that is moving toward home plate at a velocity of 40m/s.

Momentum = _____

Mass = _____

Velocity = _____

9. Which has greater momentum, a 2.0kg hockey puck moving east at 2.5m/s or a 1.3kg hockey puck moving south at 3.0m/s?

Momentum = _____

Mass = _____

Velocity = _____

Momentum = _____

Mass = _____

Velocity = _____