

Name _____
Honors Physics
Period _____



Date _____
Momentum WS #1
Mrs. Nadworny

Momentum & Impulse

Directions: Read online textbook pages 207 – 214. Solve the following problems using the GUESS method and proper significant figures. Be sure to show ALL work.

- The magnitude of the momentum of an object is 64.0 kilogram-meter per second. If the velocity of the object is doubled, the magnitude of the momentum will be
A) $32.0 \frac{\text{kg} \cdot \text{m}}{\text{s}}$ B) $64.0 \frac{\text{kg} \cdot \text{m}}{\text{s}}$ C) $128 \frac{\text{kg} \cdot \text{m}}{\text{s}}$ D) $256 \frac{\text{kg} \cdot \text{m}}{\text{s}}$
- A 0.0600 kilogram ball traveling at 60.0 meters per second hits a concrete wall. What speed must a 0.0100 kilogram bullet have in order to hit the wall with the same magnitude of momentum as the ball?
A) 3.60 m/s B) 6.00 m/s C) 360. m/s D) 600. m/s
- At the same time, 8 kilograms of feathers and 6 kilograms of lead are dropped from a height of three meters.
 - After they have fallen 1 meter, the 6 kilograms of lead has
(A) less mass and less inertia
(B) less mass and the same inertia
(C) more mass and less inertia
(D) more mass and the same inertia
 - After they have fallen 1 meters, the 6 kilograms of lead has
(A) less speed and less momentum
(B) less speed and the same momentum
(C) the same speed and less momentum
(D) the same speed and the same momentum
- A 6.2 kg duck is flying around the pond. It has a momentum of 30.7 kg·m/s. What is the duck's speed?
- A 5.00 kilogram block slides along a horizontal, frictionless surface at 10.0 meters per second for 4.00 seconds. Calculate the magnitude of the block's momentum.
- A mass is traveling east with a constant velocity of 40. meters per second and a momentum of 1.0×10^3 kilogram-meters per second. Calculate the size of the mass.

Answers in size order: 5.0, 25, 50.0