

Momentum Worksheet

True or False?

- _____ 1.) Momentum is not equal to the mass of an object divided by its velocity.
- _____ 2.) The momentum of an object can change.
- _____ 3.) Two objects with the same mass will always have the same momentum.
- _____ 4.) All moving objects don't have momentum.
- _____ 5.) When an object speeds up, it gains momentum.
- _____ 6.) Objects with different masses can't have the same momentum.
- _____ 7.) Direction does not matter when you are measuring momentum.
- _____ 8.) Momentum can be transferred from one object to another.
- _____ 9.) When objects collide, some momentum is lost.
- _____ 10.) A tiny bullet can have more momentum than a huge truck.

Fill in the blank.

- 11.) A moving car has momentum. If it moves twice as fast, its momentum is _____ as much.
- 12.) Two cars, one twice as heavy as the other, move down a hill at the same speed. Compared to the lighter car, the momentum of the heavier car is _____ as much.

Given the following data, solve for momentum. $P = mv$

<u>Object</u>	<u>Mass (kg)</u>	<u>Velocity (m/s)</u>	<u>Momentum (kg-m/s)</u>
13.) Bird	.04	19	.76
14.) Football player	100	10	
15.) Skier	60	20	
16.) Bullet	.004	600	
17.) Frog	.9	12	
18.) Meteorite	.1	1,000	
19.) Baseball	.14	30	
20.) Wagon	2	3	
21.) Satellite	3,000	8,000	

Equation	Gives you...	If you know...
$p = mv$	Momentum	Mass and Speed
$m = \frac{p}{v}$	Mass	Momentum and Speed
$v = \frac{p}{m}$	Speed	Momentum and Mass

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

Looking for	Solution
Given	
Relationships	

23.) 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?

Looking for	Solution
Given	
Relationships	