

PRACTICE 

Use your knowledge about solving equations to work out the following problems:

1. If the truck has a mass of 4,000. kilograms, what is its momentum? Express your answer in $\text{kg} \cdot \text{m/s}$.
2. If the car has a mass of 1,000. kilograms, what is its momentum?
3. An 8-kilogram bowling ball is rolling in a straight line toward you. If its momentum is $16 \text{ kg} \cdot \text{m/s}$, how fast is it traveling?
4. A beach ball is rolling in a straight line toward you at a speed of 0.5 m/s . Its momentum is $0.25 \text{ kg} \cdot \text{m/s}$. What is the mass of the beach ball?
5. A 4,500.-kilogram truck travels in a straight line at $10. \text{ m/s}$. What is its momentum?
6. A 1,500.-kilogram car is also traveling in a straight line. Its momentum is equal to that of the truck in the previous question. What is the velocity of the car?
7. Which would take more force to stop in 10. seconds: an 8.0-kilogram ball rolling in a straight line at a speed of 0.2 m/s or a 4.0-kilogram ball rolling along the same path at a speed of 1.0 m/s ?
8. The momentum of a car traveling in a straight line at 25 m/s is $24,500 \text{ kg} \cdot \text{m/s}$. What is the car's mass?
9. A 0.14-kilogram baseball is thrown in a straight line at a velocity of $30. \text{ m/s}$. What is the momentum of the baseball?
10. Another pitcher throws the same baseball in a straight line. Its momentum is $2.1 \text{ kg} \cdot \text{m/s}$. What is the velocity of the ball?
11. A 1-kilogram turtle crawls in a straight line at a speed of 0.01 m/s . What is the turtle's momentum?