**Name: .**

**Momentum Calculation Practice** (modified)

Table of Information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dimension | Variable(letter) | Formula | Unit | Sample |
| Momentum |  |  |  |  |
| Velocity |  |  |  |  |
| Mass |  |  |  |  |

Velocity: $v=\frac{∆x}{∆t}= \frac{x\_{f}-x\_{i}}{t\_{f}-t\_{i}}$ Weight: $F\_{g}=mg$

1. Find the momentum of a 450 kg car moving at 24 m/s east.

Given: Formula:

Mass m = \_\_\_\_\_\_\_\_

 p = m \* v

Velocity v = \_\_\_\_\_\_\_\_ p = ( ) \* ( )

Unknown: Solution:

Momentum p = ??? p = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the momentum of a 25 kg ball moving at 6 m/s upward.

Given: Formula:

Mass m = \_\_\_\_\_\_\_\_

 p = m \* v

Velocity v = \_\_\_\_\_\_\_\_ p = ( ) \* ( )

Unknown: Solution:

Momentum p = ??? p = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Summary:

To find ***momentum*** when I know ***mass*** and ***velocity***, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. A cart’s momentum is 56 kg m/s north. If its velocity is 3.7 m/s north, find the cart’s mass.

Given: Formula:

Momentum p = \_\_\_\_\_\_\_\_

 m = p / v

Velocity v = \_\_\_\_\_\_\_\_ m = ( ) / ( )

Unknown: Solution:

Mass m = ??? m = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A ball’s momentum is 18 kg m/s north. If its velocity is 6 m/s north, find the ball’s mass.

Given: Formula:

Momentum p = \_\_\_\_\_\_\_\_

 m = p / v

Velocity v = \_\_\_\_\_\_\_\_ m = ( ) / ( )

Unknown: Solution:

Mass m = ??? m = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Summary:

To find ***mass*** when I know ***momentum*** and ***velocity***, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. A ball’s momentum is 30 kg m/s north. If its mass is 3 kilograms, find the ball’s velocity.

Given: Formula:

Momentum p = \_\_\_\_\_\_\_\_

 v = p / m

Mass m = \_\_\_\_\_\_\_\_ v = ( ) / ( )

Unknown: Solution:

Velocity v = ????? v = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. A ship’s momentum is 35,000 kg m/s east. If its mass is 7000 kilograms, find the ship’s velocity.

Given: Formula:

Momentum p = \_\_\_\_\_\_\_\_

 v = p / m

Mass m = \_\_\_\_\_\_\_\_ v = ( ) / ( )

Unknown: Solution:

Velocity v = ????? v = \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Summary:

To find ***velocity*** when I know ***momentum*** and ***mass***, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.