

Newton's Laws Worksheet

Name: _____

Date: _____

Part A: True or False

Write **T** or **F** and correct the false statements.

1. An object at rest will always stay at rest unless acted on by a force. _____
 2. If the net force on an object is zero, it must be at rest. _____
 3. Acceleration increases when mass increases (force constant). _____
 4. Newton's First Law is also known as the Law of Inertia. _____
 5. If a net force acts on an object, it will accelerate. _____
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Part B: Fill in the Blanks

1. A force is a _____ or _____ acting on an object.
 2. The unit of force is the _____.
 3. Newton's First Law states that objects resist changes in motion due to _____.
 4. According to Newton's Second Law, acceleration is directly proportional to _____.
 5. If mass increases and force stays the same, acceleration will _____.
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Part C: Multiple Choice

1. What happens when the net force on an object is zero?
 - A. It accelerates
 - B. It stops immediately
 - C. It moves at constant velocity
 - D. Its mass changes
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2. A larger mass will have:
- A. More acceleration
 - B. Less inertia
 - C. More inertia
 - D. No effect on motion
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3. Which equation represents Newton's Second Law?
- A. $F = mv$
 - B. $F = ma$
 - C. $v = at$
 - D. $W = mg$
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Part D: Short Answer

1. Explain why passengers move forward when a car suddenly stops. (Use Newton's First Law)

2. What is the relationship between force, mass, and acceleration?

Part E: Problem Solving (AP Level)

1. A 10 kg object experiences a net force of 50 N.
Find the acceleration.

2. A 60 kg person is brought to rest from 15 m/s in 3 seconds.
Find:
- a) Acceleration
 - b) Force applied

3. Challenge Question (AP Thinking):

If the same force is applied to two objects, one with mass 2 kg and one with mass 8 kg:

- Which object accelerates more?
- Explain why.
