

# Fundamentals of Dynamics

Would you like to refresh your knowledge of the Laws of motion?

Opzione 1

Does Newton's 1st Law require velocity to be parallel to the applied force? \* 3 points

- Yes
- No
- It depends on how great is the mass
- It depends on the force type

**Correct answer**

No

**Feedback for correct answers**

*correct*

**Feedback for incorrect answers**

*incorrect*

When an object's velocity is zero, can there be forces upon the object? \* 3 points

- Yes
- No
- Yes, but non strong enough to cause motion
- We can't say

**Correct answer**

- Yes

**Feedback for correct answers**

*correct*

**Feedback for incorrect answers**

*incorrect*

The SI unit for acceleration is \*

3 points

- m/kg
- m/s
- m/s<sup>2</sup>
- kg\*m/s<sup>2</sup>

Correct answer

- m/s<sup>2</sup>

Feedback for correct answers

*correct*

Feedback for incorrect answers

*incorrect*

The SI unit for force is equivalent to \*

3 points

- m/kg
- m/s
- m/s<sup>2</sup>
- kg\*m/s<sup>2</sup>

Correct answer

- kg\*m/s<sup>2</sup>

Feedback for correct answers

*correct*

Feedback for incorrect answers

*incorrect*

In the expression "balanced object", what does "balanced" refer to? \*

3 points

- $v=0$
- $a=0$
- Sum of forces = 0 N
- homogeneous density

Correct answers

- $a=0$
- Sum of forces = 0 N

Feedback for correct answers

*correct*

Feedback for incorrect answers

*incorrect*

## What is Newton's 3rd law?

3 points

- $F = m * a$
- Object at rest or in motion stay at rest or in motion unless acted on by an outside force
- As the speed of a falling object increases, air resistance increases
- When one body exerts a force on a second body, the second body simultaneously exerts a force equal in magnitude and opposite in direction on the first body.

### Correct answer

- When one body exerts a force on a second body, the second body simultaneously exerts a force equal in magnitude and opposite in direction on the first body.

### Feedback for correct answers

*correct*

### Feedback for incorrect answers

*incorrect*

A 30 kg block with a velocity of 50 m/s is encountering a constant 8 N friction force. What is the acceleration? \*

3 points

- 6 m/s<sup>2</sup>
- 0.26 m/s<sup>2</sup>
- 24 m/s<sup>2</sup>
- 6.24 m/s<sup>2</sup>

Correct answer

- 0.26 m/s<sup>2</sup>

Feedback for correct answers

*correct*

Feedback for incorrect answers

*incorrect*

A 30 kg block with a velocity of 50 m/s is encountering a constant 8 N friction force. How long does it takes the block to stop? \*

3 points

- 12' 6"
- 58"
- 240"
- 6' 12"

**Correct answer**

- 6' 12"

**Feedback for correct answers**

*Correct*

**Feedback for incorrect answers**

*Uncorrect*

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