ONTARIO PHYSICS, GRADE 11, UNIVERSITY PREPARATION (SPH3U) · UNIT B · 25 QUESTIONS

# Forces — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **A force is best defined as**

- A energy only
- B a push or pull that can change motion
- C mass × speed
- D a type of matter

Understand It with Pulse | Flag a mistake

**2** **The SI unit of force is the**

- A joule
- B newton
- C watt
- D kilogram

Understand It with Pulse | Flag a mistake

3 **A net force acts on a 10 kilogram wooden crate, giving it acceleration 2 metres per second squared. What is the net force in newtons?**



ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A net force acts on a 5 kilogram object, giving it acceleration 4 metres per second squared. What is the net force in newtons?**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A net force acts on a 20 kilogram wagon, giving it acceleration 3 metres per second squared. What is the net force in newtons?**



ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A net force acts on a 4 kilogram object, giving it acceleration 5 metres per second squared. What is the net force in newtons?**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A net force acts on a 12 kilogram object, giving it acceleration 2 metres per second squared. What is the net force in newtons?**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A net force of 20 newtons acts on a 5 kilogram object. What is its acceleration in metres per second squared?**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A net force of 30 newtons acts on a 10 kilogram object. What is its acceleration in metres per second squared?**

ANSWER _____

Understand It with Pulse | Flag a mistake

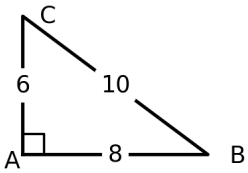
10 **A net force of 24 newtons acts on a 6 kilogram bowling ball. What is its acceleration in metres per second squared?**



ANSWER

Understand It with Pulse | Flag a mistake

**11** **The diagram shows a right triangle representing a force and its components, with sides labelled 8, 6, and 10. Which side is the hypotenuse?**




- **A** 8
- **B** 6
- **C** 10
- **D** None of them

Understand It with Pulse | Flag a mistake

**12** **A net force of 50 newtons acts on a 25 kilogram object. What is its acceleration in metres per second squared?**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **What is the weight in newtons of a 10 kilogram object on Earth, using 10 newtons per kilogram for gravity?**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **What is the weight in newtons of a 5 kilogram object on Earth, using 10 newtons per kilogram for gravity?**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **What is the weight in newtons of a 20 kilogram rock on Earth, using 10 newtons per kilogram for gravity?**



ANSWER _____

Understand It with Pulse | Flag a mistake

16 **What is the weight in newtons of a 2 kilogram object on Earth, using 10 newtons per kilogram for gravity?**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **Weight differs from mass because weight is**

A the same everywhere

B measured in kilograms

C independent of gravity

D a force due to gravity, which varies with location

Understand It with Pulse | Flag a mistake

18 **Newton first law states that an object at rest stays at rest unless acted on by**

A an unbalanced force

B a balanced force

C gravity only

D friction only

Understand It with Pulse | Flag a mistake

19 **Newton second law is summarized by**

A F equals m ÷ a

B F equals m × a

C F equals m + a

D F equals a ÷ m

Understand It with Pulse | Flag a mistake

20 **Newton third law states that for every action there is**

A no reaction

B a larger reaction

C an equal and opposite reaction

D a reaction in the same direction

Understand It with Pulse | Flag a mistake

21

## Friction acts on a sled sliding across the snow



A in the direction of motion

B upward always

C only on stationary objects

D opposite to the direction of motion or attempted motion

Understand It with Pulse | Flag a mistake

22 **The normal force on an object resting on a horizontal surface acts**

A perpendicular to the surface, upward

B downward

C in the direction of motion

D along the surface

Understand It with Pulse | Flag a mistake

23 **Two forces of 30 newtons east and 20 newtons west act on an object. The net force is**

A 50 newtons east

B 10 newtons east

C 50 newtons west

D 10 newtons west

Understand It with Pulse | Flag a mistake

**24** **Two forces of 30 newtons east and 20 newtons east act on a race car. The net force is**



A 10 newtons east

B 10 newtons west

C 50 newtons east

D 50 newtons west

Understand It with Pulse | Flag a mistake

25 **An object with balanced forces acting on it will**

A always be at rest

B accelerate

C change direction

D maintain its velocity, staying at rest or moving at constant velocity

Understand It with Pulse | Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | B | **10.** | 4 | **19.** | B |
| **2.** | B | **11.** | C | **20.** | C |
| **3.** | 20 | **12.** | 2 | **21.** | D |
| **4.** | 20 | **13.** | 100 | **22.** | A |
| **5.** | 60 | **14.** | 50 | **23.** | B |
| **6.** | 20 | **15.** | 200 | **24.** | C |
| **7.** | 24 | **16.** | 20 | **25.** | D |
| **8.** | 4 | **17.** | D | | |
| **9.** | 3 | **18.** | A | | |

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