Forces and Force Vectors, Newtons Laws, Friction and Inclined Planes — Practice Test

Nova Scotia Advanced Physics 11 • 25 questions

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 block is pulled by 50 newtons against friction of 10 newtons. Its mass is 8 kilograms. Its acceleration, in metres per second squared, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A laboratory cart of mass 12 kilograms accelerates at 3 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A mass of 18 kilograms accelerates at 2 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A net force of 90 newtons acts on a mass of 15 kilograms. Its acceleration, in metres per second squared, is**

ANSWER

Understand It with Pulse | Flag a mistake

5 **A block of mass 6 kilograms rests on a slope . Use g = 10 metres per second squared and the slope angle gives a parallel weight component of half the weight . The parallel component , in newtons , is**

ANSWER

Understand It with Pulse | Flag a mistake

6 **A banked curve lets part of the normal force provide**

A friction only

B weight only

C lift only

D centripetal force

Understand It with Pulse | Flag a mistake

7 **A force of 100 newtons at 60 degrees to the horizontal has a horizontal component, in newtons, of**

- A 50
- B 87
- C 100
- D 25

Understand It with Pulse | Flag a mistake

8 **A force of 100 newtons at 60 degrees to the horizontal has a vertical component, in newtons, of about**

- A 50
- B 87
- C 100
- D 25

Understand It with Pulse | Flag a mistake

9 **A force of 10 newtons east and 10 newtons north gives a resultant direction of**

A northwest

B northeast

C southeast

D southwest

Understand It with Pulse | Flag a mistake

10 **A free body diagram for a block on a slope should include weight, normal force and**

A air pressure only

B friction if present

C tension always

D applied force always

Understand It with Pulse | Flag a mistake

11 **A hanging mass in equilibrium has tension equal to its**

A mass

B speed

C height

D weight

Understand It with Pulse | Flag a mistake

12 **A 5 kilogram mass is pulled by a 30 newton force against 10 newtons of friction. The acceleration, in metres per second squared, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A literature report on forces should state uncertainties in measured**

A forces and angles

B opinions

C colours

D names only

Understand It with Pulse | Flag a mistake

14 **A spring constant has units of newtons per**

A second

B kilogram

C metre

D joule

Understand It with Pulse | Flag a mistake

15 **A spring scale measures**

A force

B mass directly

C energy

D speed

Understand It with Pulse | Flag a mistake

16 **A tension force in a string over a pulley changes**

A magnitude always

B mass

C direction but not magnitude ideally

D gravity

Understand It with Pulse | Flag a mistake

17 **A block is pulled by 60 newtons against friction of 15 newtons. Its mass is 9 kilograms. Its acceleration, in metres per second squared, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A laboratory cart of mass 15 kilograms accelerates at 4 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A mass of 30 kilograms accelerates at 3 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **A net force of 72 newtons acts on a mass of 12 kilograms. Its acceleration, in metres per second squared, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **A block of mass 9 kilograms rests on a slope . Use g = 10 metres per second squared and the slope angle gives a parallel weight component of half the weight . The parallel component , in newtons , is**

ANSWER

Understand It with Pulse | Flag a mistake

22 **A block is pulled by 80 newtons against friction of 20 newtons. Its mass is 12 kilograms. Its acceleration, in metres per second squared, is**

ANSWER

Understand It with Pulse | Flag a mistake

23 **A laboratory cart of mass 8 kilograms accelerates at 6 metres per second squared. The net force, in newtons, is**

ANSWER

Understand It with Pulse | Flag a mistake

24 **A mass of 7 kilograms accelerates at 8 metres per second squared. The net force, in newtons, is**

ANSWER

Understand It with Pulse | Flag a mistake

25 **A net force of 120 newtons acts on a mass of 20 kilograms. Its acceleration, in metres per second squared, is**

ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	5	**10.**	B	**19.**	90
2.	36	**11.**	D	**20.**	6
3.	36	**12.**	4	**21.**	45
4.	6	**13.**	A	**22.**	5
5.	30	**14.**	C	**23.**	48
6.	D	**15.**	A	**24.**	56
7.	A	**16.**	C	**25.**	6
8.	B	**17.**	5		
9.	B	**18.**	60		

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