ALASKA PHYSICS · UNIT 2 · 25 QUESTIONS

Work, Energy, and Momentum — 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 of 25 N pushes a crate 4 m in the direction of the force. The work done is**



A 100 J

B 6.25 J

C 29 J

D 21 J

Understand It with Pulse | Flag a mistake

2 **A 6 kg object moves at 4 m/s. Its kinetic energy is**

- A 24 J
- B 48 J
- C 12 J
- D 96 J

Understand It with Pulse | Flag a mistake

3 **Use g = 10 m/s². A 3 kg object is 8 m above the ground. Its gravitational potential energy is**

- A 24 J
- B 11 J
- C 80 J
- D 240 J

Understand It with Pulse | Flag a mistake

4 **A spring with spring constant 80 N/m is stretched 0.5 m. Its elastic potential energy is**

A 40 J

B 5 J

C 10 J

D 20 J

Understand It with Pulse | Flag a mistake

5 **A machine does 300 J of work in 15 s. Its power is**

A 20 W

B 0.05 W

C 315 W

D 4500 W

Understand It with Pulse | Flag a mistake

6 **A wagon cart of mass 8 kg moves at 5 m/s. Its momentum is**



- **A** 1.6 kg m/s
- **B** 3 kg m/s
- **C** 13 kg m/s
- **D** 40 kg m/s

Understand It with Pulse | Flag a mistake

7 **A force of 25 N acts for 4 s. The impulse delivered is**

- **A** 100 N s
- **B** 6.25 N s
- **C** 29 N s
- **D** 21 N s

Understand It with Pulse | Flag a mistake

8 **In a closed system with no outside forces, the total momentum before a collision compared with after is**

- **A** the same
- **B** always smaller
- **C** zero
- **D** always larger

Understand It with Pulse | Flag a mistake

9

Work is zero when the force is applied

A in the direction of motion

B perpendicular to the motion

C opposite the motion

D for a long time

Understand It with Pulse

Flag a mistake

10 **If the speed of a race car doubles, its kinetic energy**



A quadruples

B doubles

C halves

D stays the same

Understand It with Pulse | Flag a mistake

11 **A 2 kg object moving at 6 m/s collides and sticks to a stationary 4 kg object. Their common speed is**

- **A** 6 m/s
- **B** 2 m/s
- **C** 12 m/s
- **D** 3 m/s

Understand It with Pulse | Flag a mistake

12 **A force of 15 N moves an object 6 m. The work done, in joules, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A 3 kg object moves at 6 m/s. Its kinetic energy, in joules, is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **Use g = 10 m/s². A 4 kg object is 5 m above the ground. Its gravitational potential energy, in joules, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A motor does 900 J of work in 30 s. Its power, in watts, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **A bowling ball of mass 7 kg moves at 6 m/s. Its momentum, in kilogram meters per second, is ____**



ANSWER _____

Understand It with Pulse | Flag a mistake

17 **The work energy theorem says the net work on an object equals its change in**

A potential energy

B kinetic energy

C momentum

D power

Understand It with Pulse | Flag a mistake

18 **In an elastic collision, both momentum and total**

A force are conserved

B mass are conserved

C velocity are conserved

D kinetic energy are conserved

Understand It with Pulse | Flag a mistake

19 **Use g = 10 m/s². An apple dropped from 45 m reaches the ground with speed**



A 15 m/s

B 90 m/s

C 30 m/s

D 450 m/s

Understand It with Pulse | Flag a mistake

20 **A spring with spring constant 200 N/m is compressed 0.3 m. The spring force is**

- A 667 N
- B 230 N
- C 60 N
- D 0.0015 N

Understand It with Pulse | Flag a mistake

21 **An impulse changes an object**

- A mass
- B momentum
- C weight
- D volume

Understand It with Pulse | Flag a mistake

22 **Two cyclists of equal mass m move toward each other at 4 m/s and 4 m/s. The total momentum is**



A 8m

B 4m

C 0

D 16m

Understand It with Pulse | Flag a mistake

23 **If friction does negative work on a sliding object, its kinetic energy**

- **A** increases
- **B** stays the same
- **C** decreases
- **D** becomes zero at once

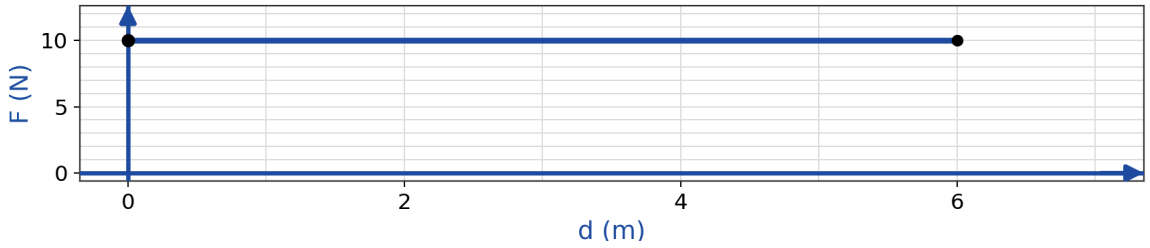
Understand It with Pulse | Flag a mistake

24 **A 5 kg object at rest is pushed by a 15 N force for 4 s. Its final momentum, in kilogram meters per second, is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **The graph shows force against distance for a moving object. The work done is**



A 10 J

B 16 J

C 6 J

D 60 J

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	A	**10.**	A	**19.**	C
2.	B	**11.**	B	**20.**	C
3.	D	**12.**	90	**21.**	B
4.	C	**13.**	54	**22.**	C
5.	A	**14.**	200	**23.**	C
6.	D	**15.**	30	**24.**	60
7.	A	**16.**	42	**25.**	D
8.	A	**17.**	B		
9.	B	**18.**	D		

© 2026 Brett Robbins. All Rights Reserved.