NORTHWEST TERRITORIES PHYSICS 12 (MPH--12) · UNIT A · 25 QUESTIONS

Vectors and Kinematics — Practice Test

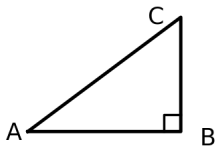
This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A displacement of 6 m east plus 8 m north has a magnitude, in metres, of**

- **A** 8
- **B** 10
- **C** 14
- **D** 48

Understand It with Pulse | Flag a mistake

2 **The diagram shows a vector with a horizontal side of 4 m and a vertical side of 3 m. The magnitude of the vector, in metres, is**



- **A** 4
- **B** 5
- **C** 6
- **D** 7

Understand It with Pulse | Flag a mistake

3 **A displacement of 25 m has a horizontal component of 15 m. Its vertical component, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A cyclist rides east at 8 m per s and a car passes east at 20 m per s. The speed of the car relative to the cyclist, in metres per second, is**



A 8

B 12

C 20

D 28

Understand It with Pulse | Flag a mistake

5 **An object starts at 5 m per s and accelerates at 2 m per s squared for 4 s. Its final speed, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

6 **An object starts from rest and accelerates at 3 m per s squared for 4 s. Its displacement, in metres, is**

ANSWER

Understand It with Pulse | Flag a mistake

7 **An object starts at 10 m per s and accelerates at 2 m per s squared over 11 m. Its final speed, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

8 **A runner covers a displacement of 60 m in 5 s. The average velocity, in metres per second, is**



ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A stone is dropped from rest. Using g = 9.8 m per s squared, the distance it falls in 2 s, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A stone is dropped from rest. Using g = 9.8 m per s squared, its speed after 3 s, in metres per second, is**



ANSWER

Understand It with Pulse | Flag a mistake

11 **A ball is thrown upward at 19.6 m per s. Using g = 9.8 m per s squared, the time to reach the top, in seconds, is**



ANSWER

Understand It with Pulse | Flag a mistake

12 **A ball is thrown upward at 19.6 m per s. Using g = 9.8 m per s squared, its maximum height, in metres, is**

ANSWER

Understand It with Pulse | Flag a mistake

13 **A projectile moves horizontally at 20 m per s for 2 s. Its horizontal distance, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **A projectile is launched with a vertical speed of 19.6 m per s. Using g = 9.8 m per s squared, its total flight time, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A projectile moves horizontally at 15 m per s for a flight time of 4 s. Its range, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **Ignoring air resistance, the vertical speed of a projectile at the top of its flight, in metres per second, is**

A 0

B 9.8

C 19.6

D 29.4

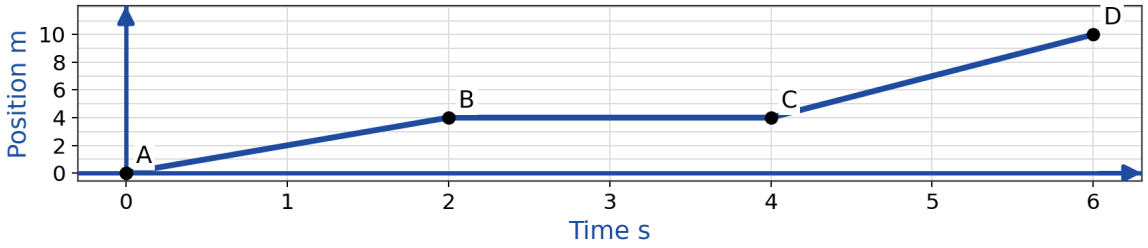
Understand It with Pulse | Flag a mistake

17 **A projectile is launched with a horizontal speed of 12 m per s and a vertical speed of 19.6 m per s. Using g = 9.8 m per s squared, its range, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

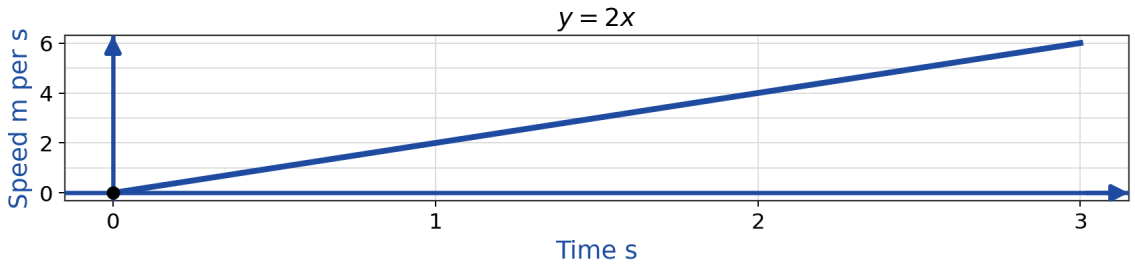
18 **The graph shows position against time. Between 0 s and 2 s, the average velocity, in metres per second, is**



- **A** 0
- **B** 2
- **C** 3
- **D** 4

Understand It with Pulse | Flag a mistake

19 **The graph shows speed against time for v = 2t. The distance travelled from 0 s to 3 s, in metres, is**



A 3

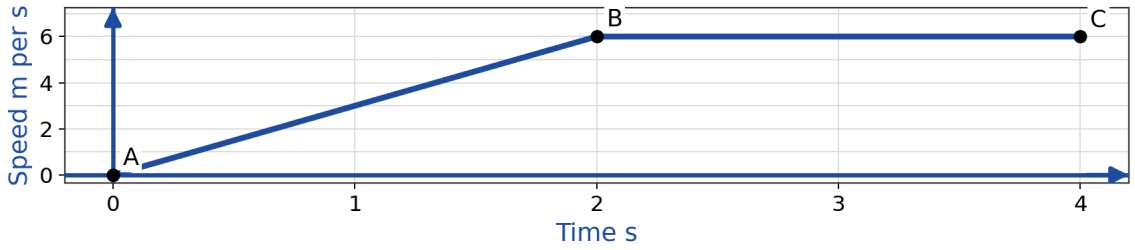
B 6

C 9

D 12

Understand It with Pulse | Flag a mistake

20 **The graph shows speed against time. The acceleration during the first 2 s, in metres per second squared, is**



- **A** 2
- **B** 3
- **C** 4
- **D** 6

Understand It with Pulse | Flag a mistake

21 **Which of the following is a vector quantity**

- **A** speed
- **B** distance
- **C** velocity
- **D** time

Understand It with Pulse | Flag a mistake

22 **A boat heads north at 4 m per s across a river flowing east at 3 m per s. The speed of the boat relative to the shore, in metres per second, is**



A 1

B 4

C 5

D 7

Understand It with Pulse | Flag a mistake

23 **A car travelling at 20 m per s brakes with an acceleration of -4 m per s squared. Its stopping time, in seconds, is**



ANSWER

Understand It with Pulse | Flag a mistake

24 **A car travelling at 20 m per s brakes with an acceleration of -4 m per s squared. Its stopping distance, in metres, is**

ANSWER

Understand It with Pulse | Flag a mistake

25

Ignoring air resistance, the horizontal speed of a projectile during its flight

A stays constant

B increases steadily

C decreases steadily

D becomes zero at the top

Understand It with Pulse

Flag a mistake

ANSWER KEY

1.	B	**10.**	29.4	**19.**	C
2.	B	**11.**	2	**20.**	B
3.	20	**12.**	19.6	**21.**	C
4.	B	**13.**	40	**22.**	C
5.	13	**14.**	4	**23.**	5
6.	24	**15.**	60	**24.**	50
7.	12	**16.**	A	**25.**	A
8.	12	**17.**	48		
9.	19.6	**18.**	B		

© 2026 Brett Robbins. All Rights Reserved.