NOVA SCOTIA PHYSICS 12 · UNIT A · 25 QUESTIONS

Two-Dimensional Motion — 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 velocity of 50 metres per second acts at an angle whose sine is 0.6 and cosine is 0.8. The horizontal component, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A velocity of 50 metres per second acts at an angle whose sine is 0.8 and cosine is 0.6. The horizontal component, in metres per second, is**

ANSWER _____

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3 **A velocity of 100 metres per second acts at an angle whose sine is 0.8 and cosine is 0.6. The horizontal component, in metres per second, is**

ANSWER _____

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4 **A velocity of 50 metres per second acts at an angle whose sine is 0.6 and cosine is 0.8. The vertical component, in metres per second, is**

ANSWER

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5 **A velocity of 100 metres per second acts at an angle whose sine is 0.6 and cosine is 0.8. The vertical component, in metres per second, is**

ANSWER

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6 **A velocity of 50 metres per second acts at an angle whose sine is 0.8 and cosine is 0.6. The vertical component, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

7 **A projectile is launched at 45 degrees with speed 20 metres per second . Using g = 10 metres per second squared , the horizontal range , in metres , is**

ANSWER

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8 **A projectile is launched at 45 degrees with speed 30 metres per second . Using g = 10 metres per second squared , the horizontal range , in metres , is**

ANSWER _____

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9 **A projectile is launched at 45 degrees with speed 10 metres per second . Using g = 10 metres per second squared , the horizontal range , in metres , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A projectile is launched vertically with vertical speed 20 metres per second . Using g = 10 , the time to return to launch height , in seconds , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **A projectile is launched vertically with vertical speed 30 metres per second . Using g = 10 , the time to return to launch height , in seconds , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A projectile is launched vertically with vertical speed 15 metres per second . Using g = 10 , the time to return to launch height , in seconds , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A projectile is launched vertically with vertical speed 20 metres per second . Using g = 10 , the maximum height , in metres , is**

ANSWER _____

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14 **A projectile is launched vertically with vertical speed 10 metres per second . Using g = 10 , the maximum height , in metres , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A projectile is launched vertically with vertical speed 30 metres per second . Using g = 10 , the maximum height , in metres , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **A boat moves at 3 metres per second across a river while the current moves at 4 metres per second. The resultant speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **A boat moves at 6 metres per second across a river while the current moves at 8 metres per second. The resultant speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A boat moves at 9 metres per second across a river while the current moves at 12 metres per second. The resultant speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A projectile in flight has horizontal acceleration equal to**

A zero ignoring air resistance

B g

C its speed

D its range

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20 **The horizontal velocity of a projectile ignoring air resistance stays**

A increases

B constant

C decreases to zero

D doubles

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21 **At the top of its flight a projectile has vertical velocity equal to**

- A maximum
- B its launch speed
- C zero
- D g

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22 **Relative velocity is the velocity of one object as seen from**

- A a fixed star only
- B the ground only
- C its own frame only
- D another object

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23 **Two perpendicular vectors are added using**

- A Pythagoras theorem
- B simple addition only
- C subtraction only
- D multiplication

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24 **The range of a projectile at 45 degrees is a maximum because**

- A gravity is zero
- B horizontal and vertical components balance
- C air resistance peaks
- D speed is highest

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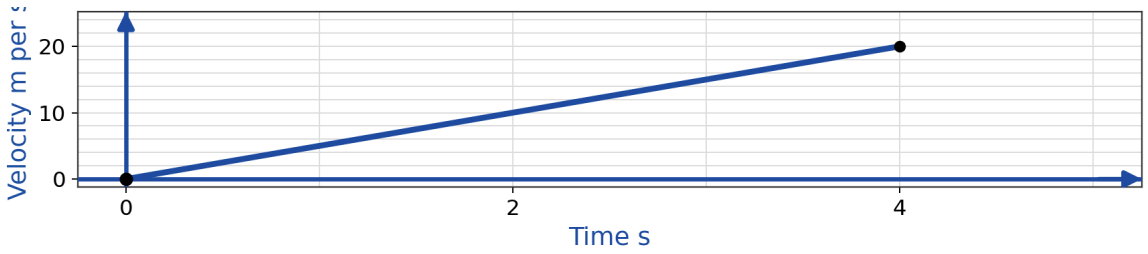
25 **The graph shows velocity against time. The displacement from 0 seconds to 4 seconds, in metres, is**



A 80

B 20

C 40

D 10

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ANSWER KEY

1.	40	**10.**	4	**19.**	A
2.	30	**11.**	6	**20.**	B
3.	60	**12.**	3	**21.**	C
4.	30	**13.**	20	**22.**	D
5.	60	**14.**	5	**23.**	A
6.	40	**15.**	45	**24.**	B
7.	40	**16.**	5	**25.**	C
8.	90	**17.**	10		
9.	10	**18.**	15		

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