NOVA SCOTIA ADVANCED 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 ball is launched horizontally from a height of 5 metres . Using g = 10 , the time to hit the ground , in seconds , is**



ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A ball is launched horizontally from a height of 20 metres . Using g = 10 , the time to hit the ground , in seconds , is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A ball is launched horizontally from a height of 45 metres . Using g = 10 , the time to hit the ground , in seconds , is**

ANSWER

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4 **A ball launched horizontally at 15 metres per second falls for 2 seconds. The horizontal distance, in metres, is**

ANSWER

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5 **A ball launched horizontally at 20 metres per second falls for 3 seconds. The horizontal distance, in metres, is**

ANSWER

Understand It with Pulse | Flag a mistake

6 **A ball launched horizontally at 10 metres per second falls for 4 seconds. The horizontal distance, in metres, is**

ANSWER

Understand It with Pulse | Flag a mistake

7 **A velocity of 120 metres per second acts at an angle with sine 0.6 and cosine 0.8. The vertical component, in metres per second, is**

ANSWER

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8 **A velocity of 80 metres per second acts at an angle with sine 0.8 and cosine 0.6. The vertical component, in metres per second, is**

ANSWER

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9 **A velocity of 200 metres per second acts at an angle with sine 0.6 and cosine 0.8. The vertical component, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

10 **A projectile has horizontal speed 20 and vertical speed 10 metres per second . Using g = 10 , the range , in metres , is**

ANSWER

Understand It with Pulse | Flag a mistake

11 **A projectile has horizontal speed 30 and vertical speed 10 metres per second . Using g = 10 , the range , in metres , is**

ANSWER

Understand It with Pulse | Flag a mistake

12 **A projectile has horizontal speed 10 and vertical speed 20 metres per second . Using g = 10 , the range , in metres , is**

ANSWER

Understand It with Pulse | Flag a mistake

13 **A boat crosses a river 100 metres wide at 5 metres per second relative to the water. The crossing time, in seconds, is**



ANSWER

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14 **A boat crosses a river 200 metres wide at 10 metres per second relative to the water. The crossing time, in seconds, is**

ANSWER

Understand It with Pulse | Flag a mistake

15 **A boat crosses a river 150 metres wide at 5 metres per second relative to the water. The crossing time, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **A projectile has horizontal speed 12 metres per second and falls for 3 seconds. The horizontal displacement, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

17 **A projectile has horizontal speed 18 metres per second and falls for 2 seconds. The horizontal displacement, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A projectile has horizontal speed 25 metres per second and falls for 4 seconds. The horizontal displacement, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **For a projectile launched at an angle, the velocity vector at the top of flight is**

A horizontal only

B vertical only

C zero

D diagonal

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20 **The independence of horizontal and vertical motion means horizontal motion does not affect**

A range

B time of flight

C launch speed

D angle

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21 **Air resistance on a projectile reduces both range and**

A launch angle

B mass

C maximum height

D gravity

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22 **A projectile launched at 30 degrees and one at 60 degrees with the same speed have the same**

A maximum height

B time of flight

C vertical speed

D range

Understand It with Pulse | Flag a mistake

23 **Relative velocity of an object is found by vector**

- A subtraction of the observer velocity
- B addition of masses
- C multiplication of speeds
- D division of distances

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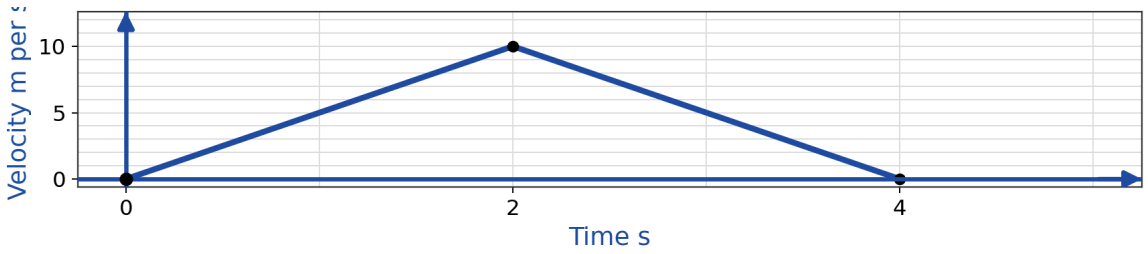
24 **The resultant of two vectors at right angles has magnitude from**

- A simple addition
- B Pythagoras theorem
- C vector product only
- D trigonometry only

Understand It with Pulse | Flag a mistake

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



A 40

B 10

C 20

D 5

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Flag a mistake

ANSWER KEY

1.	1	**10.**	40	**19.**	A
2.	2	**11.**	60	**20.**	B
3.	3	**12.**	40	**21.**	C
4.	30	**13.**	20	**22.**	D
5.	60	**14.**	20	**23.**	A
6.	40	**15.**	30	**24.**	B
7.	72	**16.**	36	**25.**	C
8.	64	**17.**	36		
9.	120	**18.**	100		

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