

McRoberts Secondary

Physics 11 Kinematics Retest 2025-10-15



Personal Data

Family Name:

Given Name:

Signature:

checked

Registration Number

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In this section **no** changes or modifications must be made!

Scrambling

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Type
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Exam ID(Physics 11)
25101500002

Please mark the boxes carefully: Not marked: or

This document is scanned automatically. Please keep clean and do not bend or fold. For filling in the document please use a **blue or black pen**.

Only clearly marked and positionally accurate crosses will be processed!

Answers 1 - 15

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	a	b	c	d

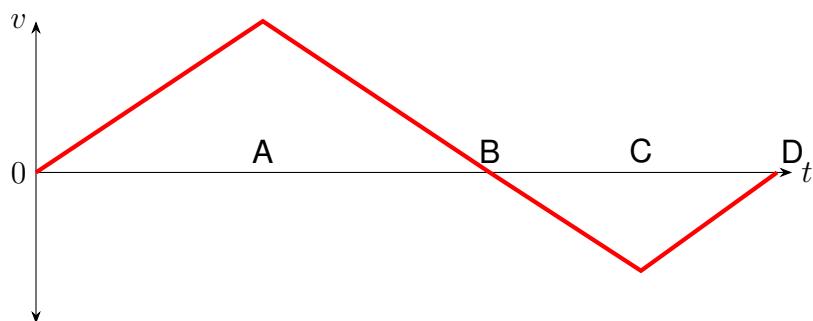
Answers 16 - 25

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	a	b	c	d



1. True or false? If the velocity-time graph of an object is a horizontal line, then the object must be at rest.
 - a. True
 - b. False
2. True or false? If an object is moving to the right, then its acceleration must also be to the right.
 - a. True
 - b. False
3. True or false? If an object changes direction, then the line on its velocity-time graph must have a changing slope.
 - a. True
 - b. False
4. True or false? The area under a velocity-time graph is the displacement.
 - a. True
 - b. False
5. True or false? An object which is slowing down is represented on a velocity-time graph by a line with a negative slope.
 - a. True
 - b. False
6. Which of the following are scalars? *Select all that apply.*
 - a. distance
 - b. speed
 - c. velocity
 - d. displacement

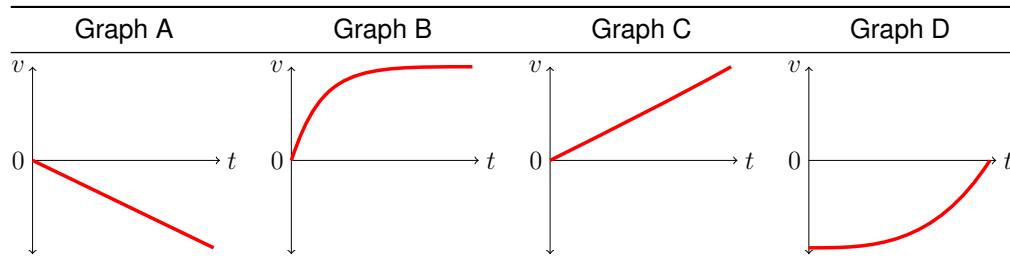
7. At which point in time is the displacement of the object maximum?



- a. Point A
 - b. Point B
 - c. Point C
 - d. Point D
8. What is the magnitude of the slope of a position-time graph?
 - a. rate
 - b. acceleration
 - c. velocity
 - d. speed

9. An object is moving to the right and speeding up. Which choice best describes its velocity and acceleration? (Assume right is positive.)
- velocity is positive; acceleration is negative.
 - velocity is negative; acceleration is positive.
 - velocity and acceleration are both positive.
 - velocity and acceleration are both negative.

10. Which velocity-time graph represents the motion of an object that is slowing down?



- a. Graph A
 b. Graph B
 c. Graph C
 d. Graph D
11. Ball 1 is dropped from the top of a building. One second later, ball 2 is dropped from the same building. If air resistance can be ignored, then as time progresses (and while the balls are still in free fall), the distance between them
- increases.
 - remains constant.
 - decreases.
 - cannot be determined from the given information.
12. Two balls are launched straight up. The first ball is launched with 2 times the initial speed of the second. Ignore air resistance. How many times higher does the first ball rise compared to the second?
- $\sqrt{2}$ times as high
 - 2 times as high
 - 2^2 times as high
 - Impossible to determine without knowing the initial speeds
13. The acceleration of gravity on Planet X is $1.79g$, where g is the acceleration of gravity on Earth. If you hit a baseball on this planet with the same speed and angle as you do on Earth, the ball would land
- 1.79 times as far
 - 1.79^2 times as far
 - $1/1.79^2$ times as far
 - $1/1.79$ times as far

14. A car traveling at speed v is able to stop in a distance d . Assuming the same constant acceleration, what distance does this car require to stop when it is traveling at speed $9v$?
- $9d$
 - d
 - $81d$
 - $\sqrt{9}d$
15. Consider a ball that is thrown upwards and which then falls back down. If up is the positive direction, then the ball's acceleration
- is always positive.
 - is always negative.
 - starts positive, then becomes negative.
 - starts negative, then becomes positive.
16. A plane flying with a horizontal velocity of 166 m/s and at an altitude of 956 m drops a package of supplies. A second package is dropped 7 s later. Ignoring air resistance, how far apart will the two packages land on the ground?
- 1717 m
 - 1591 m
 - 1477 m
 - 1162 m
17. A runner completes a marathon (42.195 km) in $4\text{ hours}, 14\text{ minutes},$ and 52 seconds . What is the runner's average speed for the marathon in m/s ?
- 2.12 m/s
 - 4.05 m/s
 - 4.98 m/s
 - 2.76 m/s
18. A car with good tires on a dry road can decelerate at about 5.0 m/s^2 when braking. If the car travels with an initial velocity of 87 km/h and brakes under such conditions, what distance would it travel before it stops?
- 681 m
 - 757 m
 - 337 m
 - 58 m
19. A car slows down uniformly and comes to a stop after 3 s . The car's average velocity during this motion was 47 km/h . What was the car's acceleration while slowing down?
- -31.3 km/h/s
 - -15.7 km/h/s
 - -40.9 km/h/s
 - -44.7 km/h/s
20. A truck travels at 43 km/h for 2 hours and at 82 km/h for 8 hours . What is the average speed for the trip?
- 74.2 km/h
 - 79.8 km/h
 - 62.5 km/h
 - 70.7 km/h

21. A golf ball is hit with an initial velocity of 36 m/s at an angle of 61° above the horizontal. What is its range (horizontal distance before hitting the ground)? Ignore air resistance and assume a flat golf course.
- 112 m
 - 168 m
 - 144 m
 - 136 m
22. What is the maximum height reached by a ball thrown straight up with an initial velocity of 19.8 m/s? Assume that the ball is thrown on the surface of the Earth and that it undergoes constant acceleration due to gravity (ignore air resistance).
- 31.7 m
 - 20 m
 - 33.7 m
 - 30.6 m
23. A ball tossed straight up returns to its starting point in 6.46 s. What was its initial speed? Ignore air resistance.
- 31.7 m/s
 - 41.6 m/s
 - 46.1 m/s
 - 32.8 m/s
24. A person throws a rock straight down from a bridge with an initial speed of 11.7 m/s. It falls 2.27 m to the water below. How much time does it take for the rock to hit the water?
- 0.1 s
 - 0.18 s
 - 0.2 s
 - 0.16 s
25. A person throws a rock horizontally, with an initial velocity of 14.6 m/s, from a bridge. It falls 4.17 m to the water below. How far does it travel horizontally before striking the water?
- 14.1 m
 - 8.4 m
 - 13.8 m
 - 13.5 m