

McRoberts Secondary

Physics 11 Kinematics Retest 2025-10-15



Personal Data

Family Name:

Given Name:

Signature:

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Registration Number

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

Scrambling

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Exam ID(Physics 11)
25101500004

Please mark the boxes carefully: Not marked: or

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Only clearly marked and positionally accurate crosses will be processed!

Answers 1 - 15

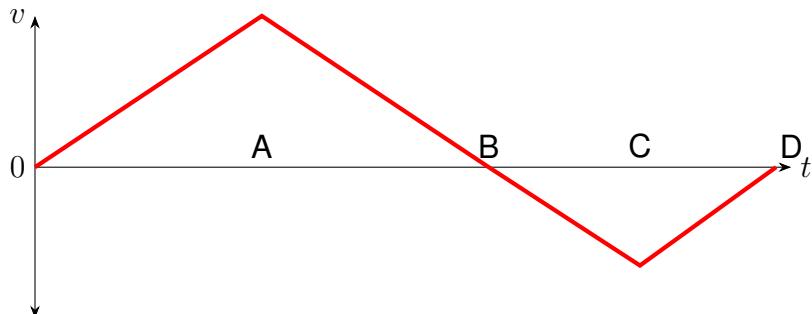
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Answers 16 - 25

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25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	a	b	c	d



1. True or false? The area under a velocity-time graph is the displacement.
 - a. True
 - b. False
2. True or false? The area under a position-time graph is the displacement.
 - a. True
 - b. False
3. True or false? If an object is moving to the right, then its acceleration must also be to the right.
 - a. True
 - b. False
4. 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
5. True or false? If an object is moving to the right, then its velocity must also be to the right.
 - a. True
 - b. False
6. At which point in time is the displacement of the object maximum?

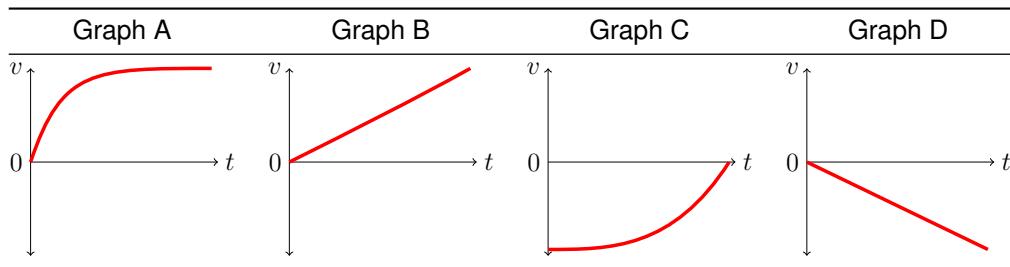


- a. Point A
 - b. Point B
 - c. Point C
 - d. Point D
7. Which of the following are scalars? *Select all that apply.*
 - a. time
 - b. velocity
 - c. acceleration
 - d. distance
8. An object is moving to the left and speeding up. Which choice best describes its velocity and acceleration? (Assume right is positive.)
 - a. velocity is positive; acceleration is negative.
 - b. velocity is negative; acceleration is positive.
 - c. velocity and acceleration are both positive.
 - d. velocity and acceleration are both negative.

9. What is the magnitude of the slope of a position-time graph?

- a. speed
- b. displacement
- c. velocity
- d. rate

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. The acceleration of gravity on Planet X is $1.27g$, 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

- a. $1/1.27$ times as far
- b. 1.27 times as far
- c. 1.27^2 times as far
- d. $1/1.27^2$ times as far

12. 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 $6v$?

- a. $36d$
- b. $\sqrt{6}d$
- c. $6d$
- d. d

13. Consider a ball that is thrown upwards and which then falls back down. If up is the positive direction, then the ball's acceleration

- a. is always positive.
- b. is always negative.
- c. starts positive, then becomes negative.
- d. starts negative, then becomes positive.

14. Two balls are launched straight up. The first ball is launched with 5 times the initial speed of the second. Ignore air resistance. How many times higher does the first ball rise compared to the second?

- a. $\sqrt{5}$ times as high
- b. 5 times as high
- c. 5^2 times as high
- d. Impossible to determine without knowing the initial speeds

15. 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.
16. A runner completes a marathon (42.195 km) in 2 hours, 52 minutes, and 45 seconds. What is the runner's average speed for the marathon in m/s?
- 6.74 m/s
 - 5.49 m/s
 - 5.07 m/s
 - 4.07 m/s
17. 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 32 km/h and brakes under such conditions, what distance would it travel before it stops?
- 8 m
 - 102 m
 - 1 m
 - 5 m
18. A plane flying with a horizontal velocity of 177 m/s and at an altitude of 839 m drops a package of supplies. A second package is dropped 9 s later. Ignoring air resistance, how far apart will the two packages land on the ground?
- 885 m
 - 1075 m
 - 1200 m
 - 1593 m
19. A car slows down uniformly and comes to a stop after 4 s. The car's average velocity during this motion was 52 km/h. What was the car's acceleration while slowing down?
- 38.4 km/h/s
 - 26 km/h/s
 - 13 km/h/s
 - 21 km/h/s
20. A truck travels at 47 km/h for 2 hours and at 98 km/h for 10 hours. What is the average speed for the trip?
- 92.4 km/h
 - 94.5 km/h
 - 72.5 km/h
 - 89.5 km/h

21. A golf ball is hit with an initial velocity of 23 m/s at an angle of 71° above the horizontal. What is its range (horizontal distance before hitting the ground)? Ignore air resistance and assume a flat golf course.
- 24 m
 - 43 m
 - 33 m
 - 44 m
22. A ball tossed straight up returns to its starting point in 4.16 s. What was its initial speed? Ignore air resistance.
- 11.3 m/s
 - 14.6 m/s
 - 20.4 m/s
 - 18.7 m/s
23. A person throws a rock straight down from a bridge with an initial speed of 12.2 m/s. It falls 34.1 m to the water below. How much time does it take for the rock to hit the water?
- 1.67 s
 - 1.14 s
 - 0.95 s
 - 0.84 s
24. What is the maximum height reached by a ball thrown straight up with an initial velocity of 37.5 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).
- 85.4 m
 - 71.7 m
 - 128.8 m
 - 39.3 m
25. A person throws a rock horizontally, with an initial velocity of 34.4 m/s, from a bridge. It falls 1.65 m to the water below. How far does it travel horizontally before striking the water?
- 28.3 m
 - 29.3 m
 - 20 m
 - 26 m