



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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Type

025

Exam ID(Physics 11)

25101500003

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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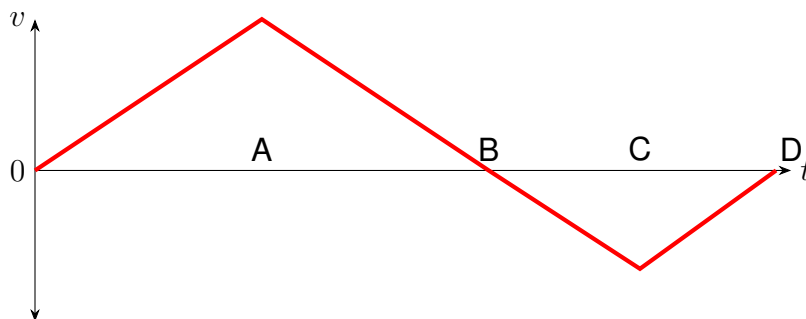
Answers 16 - 25

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a b c d

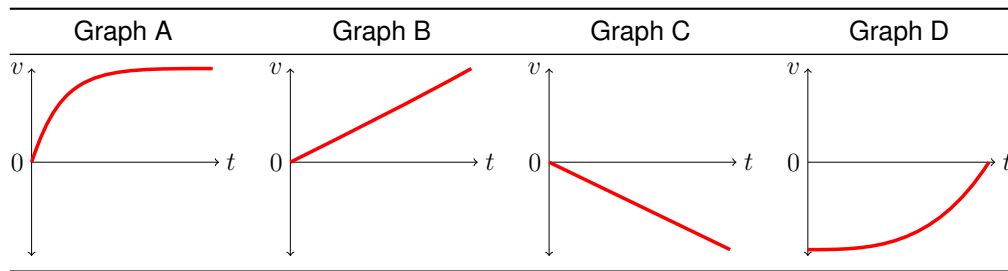


1. True or false? If an object changes direction, then the line on its velocity-time graph must have a changing slope.
 - a. True
 - b. False
2. True or false? If an object is moving to the right, then its acceleration must also be to the right.
 - a. True
 - b. False
3. True or false? An object which is slowing down is represented on a velocity-time graph by a line with a negative slope.
 - a. True
 - b. False
4. 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
5. True or false? The area under a velocity-time graph is the displacement.
 - 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. distance
 - b. time
 - c. velocity
 - d. speed
8. An object is moving to the left and slowing down. 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. 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
10. What is the magnitude of the slope of a position-time graph?
- a. distance
 - b. displacement
 - c. speed
 - d. acceleration
11. Two balls are launched straight up. The first ball is launched with 4 times the initial speed of the second. Ignore air resistance. How many times higher does the first ball rise compared to the second?
- a. $\sqrt{4}$ times as high
 - b. 4 times as high
 - c. 4^2 times as high
 - d. Impossible to determine without knowing the initial speeds
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 $7v$?
- a. $49d$
 - b. $\sqrt{7}d$
 - c. d
 - d. $7d$
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. 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
- a. increases.
 - b. remains constant.
 - c. decreases.
 - d. cannot be determined from the given information.

15. The acceleration of gravity on Planet X is $1.76g$, 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
- $1/1.76^2$ times as far
 - 1.76 times as far
 - 1.76^2 times as far
 - $1/1.76$ times as far
16. A car slows down uniformly and comes to a stop after 2 s. The car's average velocity during this motion was 33 km/h. What was the car's acceleration while slowing down?
- -22.8 km/h/s
 - -16.5 km/h/s
 - -35.6 km/h/s
 - -33 km/h/s
17. A runner completes a marathon (42.195 km) in 3 hours, 40 minutes, and 9 seconds. What is the runner's average speed for the marathon in m/s?
- 0.21 m/s
 - 3.53 m/s
 - 0.45 m/s
 - 3.19 m/s
18. A plane flying with a horizontal velocity of 104 m/s and at an altitude of 354 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?
- 951 m
 - 728 m
 - 621 m
 - 480 m
19. A truck travels at 23 km/h for 1 hours and at 105 km/h for 8 hours. What is the average speed for the trip?
- 95.9 km/h
 - 64 km/h
 - 100 km/h
 - 98.3 km/h
20. 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 118 km/h and brakes under such conditions, what distance would it travel before it stops?
- 107 m
 - 1303 m
 - 1392 m
 - 1127 m

21. A golf ball is hit with an initial velocity of 46 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.
- 146 m
 - 170 m
 - 181 m
 - 183 m
22. What is the maximum height reached by a ball thrown straight up with an initial velocity of 19.1 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).
- 18.6 m
 - 13.6 m
 - 15.5 m
 - 9.4 m
23. A person throws a rock horizontally, with an initial velocity of 10.9 m/s, from a bridge. It falls 9.34 m to the water below. How far does it travel horizontally before striking the water?
- 15 m
 - 12.1 m
 - 19.3 m
 - 16.4 m
24. A ball tossed straight up returns to its starting point in 2.93 s. What was its initial speed? Ignore air resistance.
- 10.8 m/s
 - 14.4 m/s
 - 20.7 m/s
 - 9.6 m/s
25. A person throws a rock straight down from a bridge with an initial speed of 11.8 m/s. It falls 17 m to the water below. How much time does it take for the rock to hit the water?
- 1.01 s
 - 0.57 s
 - 1.08 s
 - 0.82 s