

Honors Physics Review of Velocity and Acceleration**Multiple Choice**

Identify the letter of the choice that best completes the statement or answers the question.

- _____ 1. Speed is
- a measure of how fast something is moving.
 - always measured in terms of a unit of distance divided by a unit of time.
 - the distance covered per unit time.
 - all of the above.
 - none of the above.
- _____ 2. One possible unit of speed is
- miles per hour.
 - light years per century.
 - kilometers per hour.
 - all of the above.
 - none of the above.
- _____ 3. Acceleration is defined as the CHANGE in
- time it takes to move from one place to another place.
 - velocity of an object.
 - distance divided by the time interval.
 - velocity divided by the time interval.
 - time it takes to move from one speed to another speed.
- _____ 4. Suppose you are in a car that is going around a curve. The speedometer reads a constant 30 miles per hour. Which of the following is NOT true?
- You and the car are accelerating.
 - Your acceleration is constantly changing.
 - Your velocity is constant.
 - Your direction is constantly changing.
 - Your speed is constant.
- _____ 5. A train travels 6 meters in the first second of travel, 6 meters again during the second second of travel, and 6 meters again during the third second. Its acceleration is
- 0 m/s^2 .
 - 6 m/s^2 .
 - 12 m/s^2 .
 - 18 m/s^2 .
 - none of the above.
- _____ 6. A car starts from rest and after 7 seconds it is moving at 42 m/s. What is the car's average acceleration?
- 0.17 m/s^2
 - 1.67 m/s^2
 - 6 m/s^2
 - 7 m/s^2
 - none of the above

- _____ 7. As an object falls freely in a vacuum, its
- velocity increases.
 - acceleration increases.
 - both A and B.
 - none of the above.
- _____ 8. In the absence of air resistance, objects fall at constant
- speed.
 - velocity.
 - acceleration.
 - distances each successive second.
 - all of the above
- _____ 9. Suppose an object is in free fall. Each second the object falls
- the same distance as in the second before.
 - a larger distance than in the second before.
 - with the same instantaneous speed.
 - with the same average speed.
 - none of the above
- _____ 10. Suppose you take a trip that covers 180 km and takes 3 hours to make. Your average speed is
- 30 km/h.
 - 60 km/h.
 - 180 km/h.
 - 360 km/h.
 - 540 km/h.
- _____ 11. When something falls to the ground, it accelerates. This acceleration is called the acceleration due to gravity and is symbolized by the letter g . What is the value of g on Earth's surface?
- 0 m/s^2
 - about 5 m/s^2
 - about 10 m/s^2
 - about 20 m/s^2
 - about 50 m/s^2
- _____ 12. A car accelerates at 2 m/s^2 . Assuming the car starts from rest, how much time does it need to accelerate to a speed of 20 m/s ?
- 2 seconds
 - 10 seconds
 - 20 seconds
 - 40 seconds
 - none of the above
- _____ 13. A freely falling object starts from rest. After falling for 6 seconds, it will have a speed of about
- 6 m/s .
 - 30 m/s .
 - 60 m/s .
 - 300 m/s .
 - more than 300 m/s .

Name: _____

ID: A

True/False

Indicate whether the sentence or statement is true or false.

- ___ 14. The rate at which distance is covered is called speed.
- ___ 15. Average speed is defined as the time it takes for a trip divided by the distance.
- ___ 16. Velocity is different from speed in that velocity is speed in a given direction.
- ___ 17. A unit of velocity is the meter.
- ___ 18. The rate at which velocity changes with time is called acceleration.
- ___ 19. When a car rounds a corner at a constant speed, its acceleration is zero.
- ___ 20. Even though a car is slowing down, it is still accelerating, in the most general definition of acceleration.

Problem

- 21. A bicycle travels 15 km in 30 minutes. What is its average speed?
- 22. A stone is dropped from a cliff. After it has fallen 10 m, what is the stone's velocity?

Honors Physics Review of Velocity and Acceleration Answer Section

MULTIPLE CHOICE

1. ANS: D DIF: 2 REF: p. 11, p. 12 OBJ: 2.2
STO: 4.5.1, PI.4.5.1
2. ANS: D DIF: 2 REF: p. 11, p. 12 OBJ: 2.2
STO: 4.5.1, PI.4.5.1
3. ANS: D DIF: 1 REF: p. 15 OBJ: 2.4
STO: 4.5.1, PI.4.5.1d
4. ANS: C DIF: 3 REF: p. 14, p. 15 OBJ: 2.3, 2.4
STO: 4.5.1, PI.4.5.1d
5. ANS: A DIF: 2 REF: p. 15, p. 16 OBJ: 2.4
STO: 4.5.1, PI.4.5.1d
6. ANS: C DIF: 2 REF: p. 16 OBJ: 2.4
STO: 4.5.1, PI.4.5.1d
7. ANS: A DIF: 2 REF: p. 17, p. 18 OBJ: 2.8
STO: 4.5.1, PI.4.5.1e
8. ANS: C DIF: 2 REF: p. 17, p. 18, p. 19
OBJ: 2.5 STO: 4.5.1, PI.4.5.1d
9. ANS: B DIF: 2 REF: p. 17, p. 18, p. 19
OBJ: 2.5 STO: 4.5.1, PI.4.5.1d
10. ANS: B DIF: 2 REF: p. 13 OBJ: 2.2
STO: 4.5.1, PI.4.5.1
11. ANS: C DIF: 1 REF: p. 17 OBJ: 2.5
STO: 4.5.1, PI.4.5.1d
12. ANS: B DIF: 3 REF: p. 16 OBJ: 2.4
STO: 4.5.1, PI.4.5.1d
13. ANS: C DIF: 3 REF: p. 17, p. 18 OBJ: 2.6
STO: 4.5.1, PI.4.5.1e

TRUE/FALSE

14. ANS: T DIF: 1 REF: p. 11, p. 12 OBJ: 2.2
STO: 4.5.1, PI.4.5.1
15. ANS: F DIF: 1 REF: p. 12 OBJ: 2.2
STO: 4.5.1, PI.4.5.1
16. ANS: T DIF: 2 REF: p. 13, p. 14 OBJ: 2.3
STO: 4.5.1, PI.4.5.1d
17. ANS: F DIF: 2 REF: p. 13 OBJ: 2.3
STO: 4.5.1, PI.4.5.1d
18. ANS: T DIF: 1 REF: p. 15, p. 16 OBJ: 2.4
STO: 4.5.1, PI.4.5.1d
19. ANS: F DIF: 3 REF: p. 15, p. 16 OBJ: 2.3, 2.4
STO: 4.5.1, PI.4.5.1d

20. ANS: T DIF: 2 REF: p. 15, p. 16 OBJ: 2.4
STO: 4.5.1, PI.4.5.1d

PROBLEM

21. ANS:
30 km/hr

DIF: 2 REF: p. 11, p. 12 OBJ: 2.2 STO: 4.5.1, PI.4.5.1

22. ANS:
14 m/s

DIF: 3 REF: p. 20, p. 21 OBJ: 2.6 STO: 4.5.1, PI.4.5.1e