PRACTICE

Acceleration Study Guide

Quiz on _____

Directions: Please complete the following problems. An answer key will be provided for you to check your answers on Tuesday. Please also review all handouts and practice problems completed in class. All equations, calculators, and highlighters will be provided with the quiz.

1. What is acceleration?

   Acceleration occurs when there is a change in velocity.

2. What does velocity include?

   Speed with direction

3. What are the three different ways that an object can accelerate?

   increase speed

   decrease speed

   change direction

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4. What is the acceleration of a car that starts at rest and increases its speed to 10 m/s n 2 seconds? Show your work.

$a = \frac{10-0}{2}$ $a = \frac{10}{2}$ $a = 5\ m/s^2$

5. What is the acceleration of an object that starts at 10 m/s and slows to 2 m/s in 4 seconds? Show your work.

$a = \frac{2-10}{4}$ $a = \frac{-8}{4}$ $a = -2\ m/s^2$

6. A roller coaster car rapidly picks up speed as it rolls down a slope. As it starts down the slope, its speed is 4 m/s. But 3 seconds later, at the bottom of the slope, its speed is 22 m/s. What is its average acceleration?

$a = \frac{22-4}{3}$ $a = \frac{18}{3}$ $a = 6\ m/s^2$

7. A car advertisement states that a certain car can accelerate from rest to 70 km/h in 7 seconds. Find the car's average acceleration.

$a = \frac{70-0}{7}$ $a = \frac{70}{7}$ $a = 10\ km/hr/s$

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8. 4. A lizard accelerates from 2 m/s to 10 m/s in 4 seconds. What is the lizard's average acceleration?

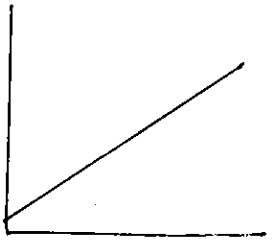
$a = \frac{10-2}{4}$ $a = \frac{8}{4}$ $a = 2\ m/s^2$

9. 5. A man hits a golf ball which accelerates at a rate of from 0 m/s to 20 m/s in 2 seconds. What acceleration of the ball?

$a = \frac{20-0}{2}$ $a = \frac{20}{2}$ $a = 10\ m/s^2$

10. If the speed and direction of an object are constant, then the acceleration is zero. What would the graph look like?

11. Acceleration is positive when the speed is increasing. Draw a picture of what this graph would look like.



12. Acceleration is negative when the speed is decreasing. Draw a picture of what this graph would look like.