

Review Test 2 1-D Kinematics

1. Allen Frith, age 45, fell for 1.08 seconds at his Tennessee home without suffering any substantial injuries. How high was the roof? (This is based on a true story)

  

2. Disgusted with physics, you take your book and toss it **UPWARD** off of the stands at Burger at 20 m/s. If Burger is 30 meters high how long does it take your book to hit the pavement below?

  

3. Lance Armstrong begins his descent of Alp Duez from rest in a time of 2.5 seconds with an acceleration of  $6 \text{ m/s}^2$  how far will he have traveled when he reaches a speed of 20 m/s?

  

4. A woman initially traveling at 118 **km/hr** was brought to rest in a distance of 0.5 m. What acceleration (in  $\text{m/s}^2$ ) did she experience? (This is a true story. . . The woman did survive)

  

5. In Austria near the Hungarian border lies a castle which has a well that is roughly 224 meters deep. If you were to drop a penny into the well what would its **VELOCITY** be just before it hits the bottom?

  

6. Super gazelle has the ability to leap vertically to a height of 7 meters. What is the total time that super gazelle spends in the air?

  

7. As you are sitting in your desk, you throw your pencil straight up in the air with a velocity of 12 m/s. It is caught by me on its way down at a point that is 0.4 meters above where it was thrown. What is the **VELOCITY** of the pencil when I catch it?

8. A ball tossed vertically upward rises, reaches its highest point, and then falls back to its starting point. During this time the acceleration of the ball is always \_\_\_\_\_.
- a. opposite its velocity.
  - b. directed upward.
  - c. in the direction of motion.
  - d. directed downward.
9. If you drop a feather and a coin at the same time in a vacuum tube, which will reach the bottom of the tube first?
- a. The coin
  - b. Neither-they will both reach the bottom at the same time.
  - c. The feather
10. A ball is thrown straight up. At the top of its path its instantaneous speed is \_\_\_\_\_.
- a. about 20 m/s.
  - b. about 10 m/s.
  - c. 50 m/s.
  - d. 0 m/s.
11. Acceleration due to gravity is also called
- a. free-fall acceleration.
  - b. displacement.
  - c. instantaneous velocity.
  - d. negative velocity.
12. When there is no air resistance, objects of different masses
- a. fall with different accelerations with different displacements.
  - b. fall with different accelerations with similar displacements.
  - c. fall with equal accelerations with different displacements.
  - d. fall with equal accelerations with similar displacements.
13. Acceleration is
- a. displacement.
  - b. the rate of change of velocity.
  - c. the rate of change of displacement.
  - d. velocity.
14. When velocity is positive and acceleration is negative, what happens to the object's motion?
- a. The object speeds up.
  - b. Nothing happens to the object.
  - c. The object slows down.
  - d. The object remains at rest.
15. Suppose an object is in free fall. Each second the object falls \_\_\_\_\_.
- a. with the same average speed.
  - b. with the same instantaneous speed.
  - c. the same distance as in the second before.
  - d. a larger distance than in the second before.

Review previous home work assignments, labs, and notes. There will be some conceptual (multiple choice) questions on the test. The problems above are meant to be samples of the types of problems that will be on the test.