

Conceptual Physics -- Review Worksheet SOLUTIONS

Name _____

- 1) Name two possible units for speed... *m/s, mph, km/hr...*
- 2) Does a speedometer in a car tell you instantaneous speed or average speed? **instantaneous**
- 3) Is a car accelerating if it travels 6 meters in the first second of travel, 6 meters again during the 2nd second of travel, and 6 meters again during the third second? Yes or No? **NO**
- 4) A car starts from rest and after 5 seconds it is moving at 35 m/s. What is the car's average acceleration? **7 m/s²**
- 5) When we talk about speed normally, that usually means the speed of an object relative to **Earth**.
- 6) If you drop a feather and a coin at the same time in a tube **with no air in it**, which will reach the bottom of the tube first. **Will reach at same time**
- 7) Suppose you take a trip that covers 180 km and takes 2 hours to make. What is your average speed in km/h **90 km/hr**
- 8) A ball is thrown straight up. At the top of its path what is its instantaneous speed? **0 m/s**
- 9) If an object is thrown straight up what is its acceleration at the top of its path? **10 m/s²**
- 10) What is the value for the acceleration of gravity on Earth? **10 m/s²**
- 11) A car has an acceleration of 2 m/s². Assuming the car starts from rest, how much time does it need to accelerate to a speed of 18 m/s? **9 seconds**
- 12) A freely falling object starts from rest. After falling for 2 seconds what will be its speed? **20 m/s**
- 13) 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? **Same time**
- 14) If a projectile is fired straight up at a speed of 20 m/s, what would be the total time required to make it back to its starting point. **4 seconds**
- 15) Draw a velocity time graph in which there is a constant positive velocity. **Straight horizontal line**
- 16) Draw a velocity time graph in which there is a constant positive acceleration **straight diagonal line**
- 17) In equations what symbol is used for speed? **v**
- 18) In equations what symbol is used for velocity? **v**
- 19) How is velocity different than speed? **Velocity has a direction, speed does not**
- 20) Name 2 possible units for Distance. **meter, mile, kilometer...**
- 21) If your acceleration is 5 m/s² that means that you gain **5** m/s of speed every **second**.
- 22) If your speed is 5 m/s that means that you gain **5** m of distance every **second**.
- 23) One way you can accelerate is to increase your speed, name 2 other ways you can accelerate. **Change direction, or decrease your speed**
- 24) During acceleration the **distance** traveled each second will increase.
- 25) What is the average speed of a dog that runs a distance of 40m in 5 seconds? **8 m/s**
- 26) A jet can be launched from 0 to 60 m/s in 3 seconds. What is the acceleration of the jet? **20 m/s²**
- 27) What is the acceleration of a car that takes 5 sec. to go from 5 m/s to 40 m/s? **7 m/s²**
- 28) Starting from rest, a car undergoes a constant acceleration of 6 m/s². How far will the car travel in the first second? **3 m.....**
- 29) If a rock falls off of the edge of a cliff and it took 4 sec. to reach the bottom, what distance did the rock travel?
First find average speed..... Avg. speed =20 m/s (midpoint between 0 m/s and 40 m/s) then multiply by time.