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/s^2**

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/s^2**

10) What is the value for the acceleration of gravity on Earth?   **10 m/s^2**

11) A car has an acceleration of 2 m/s^2. 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/s^2 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/s^2**

27) What is the acceleration of a car that takes 5 sec. to go from 5 m/s to 40 m/s?   **7 m/s^2**

28) Starting from rest, a car undergoes a constant acceleration of 6 m/s$^{2.}$. 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.