Kinematics Review

1. What kind of oil drop pattern would a car make if it were moving from left to right with the following motions?
constant acceleration? constant velocity constant deceleration?

. . . . . .

2. A car moves 5 m N and 10 m East. What is the **displacement** of the car?
Draw the picture of this movement. ***Show ALL work!!! - Answer in Decimal form***

3. Part I) Draw a **displacement vs. time** plot for each of the following motions:

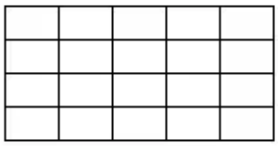
a) Constant + velocity b) rest c) constant + speed d) constant non-zero acceleration

Part II) Now show how these motions would look if they were plotted on a **V vs t plot.**

a) Constant velocity b) rest c) constant speed d) constant non-zero acceleration

4. Plot this data on the grid on the right.

time (second)	Velocity (m/s)
0	0
1	2
2	4
3	6
4	6



Find the distance traveled from t = 0 to t = 3 sec ***Use equation from reference table***

5. A car moving at a speed of 8.0 m/s enters a highway and accelerates at 3.0 m/s^2. How fast will the car be moving after it has accelerated for 56 m? ***Use equation from reference table***

Show All Work

6. There are 2 ways to have zero acceleration. Name them.

7. Know the definition of vector and scalar. Know several example of each.

scalar - _____vector -_____

ex) ex)

8. Sketch a plot of increasing, decreasing and constant slope.

9. How do you find the acceleration of an object from a V vs. t plot?

10. If an object is moving south and slowing down, what is the direction of the acceleration?

11. A baseball pitcher throws a fastball at 21 meters per second. If the batter is 18 meters from the pitcher, approximately how much time does it take for the ball to reach the batter? ***Use equation from reference table. Show ALL work!!! Equation Substitution w/ units Answer w/ units***

12. Acceleration is the time-rate change in _____

13. Name 3 ways an object can have a non-zero acceleration.

14. The distance that separates the bottom of a door and a door knob is _____ meter(s)