Physics 11 U1 Kinematics Review Sheet

Name: _____

Show all your work, even write yourself some notes on your work, little mental reminders of what you are doing.

1. The frequency of a pendulum is 25 Hz. What is the period?

2. A pendulum swings 9 times in 31 seconds. Find the period and the frequency.

3. If a spark timer is set at 10 Hz how many dots does is make in 1 second? _____

4. A car travels at 120 km/hr for 38 mins. How far does it go?

5. If a car travels 457 km at a speed of 124 km/hr how long does it take?

6. A car travels at 14 m/s for 122 seconds and then at 28m/s for 56 seconds.
a) What is the total distance covered for the entire trip?

b) What was the average speed for the entire trip?

7. A runner travels 1500m in 190 seconds and then travels 1000 m in 133 seconds. Calculate the average velocity.

8. A cop times your car and finds that your car takes 4.6 seconds to cover 150m. Are you speeding if the limit is 90 km/hr? Is the cop measuring your average or instantaneous speed?

9. Convert the following. Show the full conversion.

20 m/s = _____km/hr

120 km/hr =_____m/s

10. Identify the correct number of sigfigs.
a) 2001 _____ b) 2665 _____ c) 0.201 ____ d) 200 ____

11. Find the final velocity of a car if it accelerates at 2.3 m/s^2 for 11.1 seconds and starts at 2 m/s

12. A truck crashes into a hedge and de-accelerates at 31 m/s^2. The truck is originally going 100 km/hr.
a) How long does it take the truck to stop (time)?

b) What distance does the truck travel while stopping?

13. a) The slope of a distance vs time graph is ...

b) The slope of a velcity vs time graph is...

c) Draw a distance vs time graph that represents a car hitting a brick wall.

d) Draw a velocity vs time graph that represents a car travelling at a constant speed.

14. A runner accelerates from rest at a rate of 1.9 m/s2. How long does the runner take to reach her top speed of 6.2m/s?

15. A dragster accelerates from rest for 14.1 seconds at 10.4 m/s^2.
How far does the dragster go?

How fast is the dragster going at the end?

16. How long does it take a rock to fall from a 243 m cliff?

17. Construct a graph with the equation of
$v=(4m/s^2)t + 3m/s$

18. A ball is kicked at 32 m/s at an angle of 25 degrees above the horizontal.

a) Find Vx and Vy.

b) Find velocity at the very top of the flight.

c) Find flight time

d) Find max height

e) Find range, horizontal distance traveled

19. A ball is launched at 20 m/s at an angle of 30 degrees above the horizon but its flight is interrupted by a tall wall at a distance of 6 m.

a) Find Vx and Vy.

b) Find the time it takes to cover the 6m to the wall.

c) Find the height of the ball when it hits the wall. (This one is tricky so don't fret if you do not get it)