model questions on chapter 1 kinematics

1. The time interval between two events	**Elapsed time**
2. The length of the path between two special positions	**Distance**
3. A vector equivalent of distance - **It specifies the distance and direction of one point in space relative to another**	**Displacement**
4. A scalar measure of the rate of motion	**Speed**
5. The change of displacement with respect to time - **A vector measure of the rate of motion** - **It specifies both the magnitude and direction of the rate of motion**	**Velocity**
6. The SI unit of speed (velocity) is	**m/s** **ms^{-1}**
7. A measure rate of the velocity - **Acceleration is a vector quantity**	**Acceleration**
8. The SI unit of acceleration id	**m/s^2** **ms^{-2}**
9. The following are vector quantity	**Displacement** **Velocity - Acceleration**
10. The following are scalar quantity	**Distance - Speed** **Time - energy**
11. A car is moving a distance 24 m in 8 seconds. Its velocity is	**3 m/s**
12. A car is moving with velocity 3 m/s for 8 seconds. The distance that car moves is	**24 m**
13. Aa car starts moving with velocity 3 m/s. its velocity increases to be 5 m/s in 5 seconds, the acceleration is	**(5-3)/5** **0.4 m/s^2**
14. A car is moving with constant velocity 3m/s for 10 seconds. Its acceleration during this time is	**Zero**
15. A ball is dropped from a tower. It takes 5 seconds to reach the ground, the height of the tower is	$d = \frac{1}{2} g \times t^2$ $d = \frac{1}{2} \times 10 \times 5^2$ = 125 m
16. **If you throw a ball straight up at 12 m/s, how high it will go** $g = \frac{\Delta v}{t} = \frac{v_2 - v_1}{t}$ $g == \frac{0 - 12}{-10} = 1.2\ m/s^2$	$\boldsymbol{d = v_{av} \times t = 6 \times 1.2}$ $\boldsymbol{= 7.2\ m}$
17. **How long will it take the ball to fall to the ground. If the distance is 7.2 m** $d = \frac{1}{2} \times g \times t^2$	$\boldsymbol{t = \sqrt{\frac{2d}{g}} = \sqrt{\frac{2 \times 7.2}{10}}}$ $\boldsymbol{= 1.2\ s}$