

Chapter 1: MEASUREMENT

1- 1 mi is equivalent to 1609 m so 55 mi/h is:

- a) 15 m/s b) 25 m/s c) 66 m/s d) 88 m/s

2- A cubic box with an edge of exactly 1 cm has a volume of:

- a) 10^{-9} m^3 b) 10^{-6} m^3 c) 10^{-3} m^3 d) 10^6 m^3

3 -The SI base unit for mass is:

- a) gram b) pound c) kilogram d) kilopound

4 - A nanosecond is:

- a) 10^9 s b) 10^{-9} s c) 10^{-10} s d) 10^{10} s

5 - A gram is:

- a). 10^{-6} kg b) 10^{-3} kg c) 1 kg d) 10^3 kg

6- We can write the speed of light ($c = 299,000,000 \text{ m/s}$) using the scientific notation as:

- a) 2.99×10^8 b) 29.9×10^8 c) 0.299×10^8 d) 299×10^8

Problems: 1 (a , b) and 25 (a) .

Chapter 2: MOTION ALONG A STRAIGHT LINE

1- Complete the following statement: Displacement is

- a) a scalar that indicates the distance between two points.
- b) a vector indicating the distance and direction from one point to another.
- c) a measure of volume.
- d) the same as the distance traveled between two points.

2- A particle moves along the x axis from x_i to x_f . which results in the displacement with the largest magnitude?

- a). $x_i = 4\text{m}$, $x_f = 6\text{m}$
- b). $x_i = - 4\text{m}$, $x_f = - 8\text{m}$
- c). $x_i = - 4\text{m}$, $x_f = 2\text{m}$
- d). $x_i = - 4\text{m}$, $x_f = 4\text{m}$

3. Suppose the motion of a particle is described by the equation: $X = 20 + 4 t^2$. Find the average velocity of the particle in the time interval $t_1=2 \text{ s}$ to $t_2=5 \text{ s}$?

- a) 29 m/s
- b) 28 m/s
- c) 84 m/s
- d) 10 m/s

4. The following are equations of the position of a particle, in which situation the velocity of the particle is constant ?

- a) $x = 4 t^2 - 2$
- b) $x = -2 t^3$
- c) $x = -3 t - 2$
- d) $x = 4 t^{-2}$

5. The coordinate of a particle in meters is given by $x(t) = 16t - 3 t^3$, where the time t is in seconds. The particle is momentarily at rest at $t =$

- a) 0.75 s
- b) 1.3 s
- c) 5.3 s
- d) 7.3 s

Check point : 1, 2 , 3, 4 , 5

Problems 27, 47

Chapter 3: VECTORS

**1- A vector has two components ($A_x = 3$ cm and $A_y = - 4$ cm).
What is the magnitude of A?**

- a) 4 cm b) 5 cm c) 1 cm d) 7 cm

**2-Let $A = (2m) i + (6m) j + (3m) k$ and $B = (4m) i + (2m) j - (1m) k$.
the vector sum $S = A + B$ is:**

- a). $(6 m) i + (8m) j + (2m) k$
b). $(-2m) i + (4m) j + (4m) k$
c). $(2 m) i + (4m) j + (4m) k$
d). $(8m) i + (12m) j + (3m) k$

3- The value of $k \cdot (k \times i)$ is

- a) zero b) +1 c) -1 d) 3

Check point : 1, 2 , 3, 4 , 5

Problems 1, 3 ,13

Chapter (4) MOTION IN TWO AND THREE DIMENSIONS

- A projectile is fired from the ground level over level ground with an initial velocity that has a vertical component of 20m/s and a horizontal component of 30m/s.

1- The distance from launching to landing points is:

- (a). 40m (b) 60m (c) 20.4m (d) 122m

2-The maximum height the projectile reached is :

- (a). 40m (b) 60m (c) 20 .4m (d) 122m

3-The time the projectile takes to reach its maximum height is:

- (a). 4.1 s (b) 2.05 s (c) 1.05 s (d)0.5 s

Checkpoint : 2-4 -5

Problem : 1 and 15

Chapter (5)FORCE AND MOTION --I

Checkpoint : 1- 2- 3-4

Problem :1 – 2 (a,b) - 6 -51

Chapter (6)FORCE AND MOTION --II

Checkpoint : 1

Problem : 3 - 42

Chapter (7)Kinetic Energy and Work

Checkpoint : 1 - 2

Problem : 13 - 43

Chapter (9)Center of Mass and Linear Momentum

Problem : 1 - 18
