

Chapter 1: Measurement

Choose the correct answer

1) 1 mi is equivalent to 1609 m, then 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

Chapter 2: Motion Along A straight Line

Choose the correct answer

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) The following are equations of the position of a particle. In which situation the velocity of the particle is constant ?

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

3) The coordinate of a particle in meters is given by:

$x(t) = 16t - 3t^3$, where the time t is in seconds. The particle is momentarily at rest at the time $t =$

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

Check points: 1, 2, 3, 4, and 5

Chapter 3: Vectors

Check points: 1, 2, 3, 4, and 5

Chapter 4: Motion In Two and Three Dimensions

Choose the correct answer

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

1) The distance from launching point to landing point is:

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

2) The maximum height the projectile reached is:

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

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

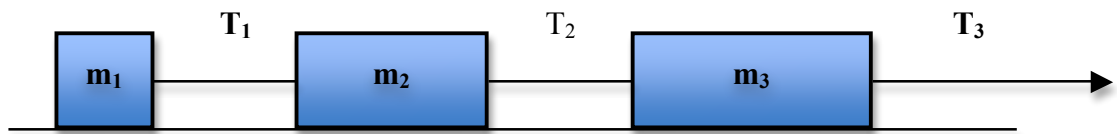
Check points: 2, 4, and 5

Problems: 1, and 15

Chapter 5: Force and Motion I

In the figure below, three connected blocks are pulled to the right on a horizontal frictionless table by a force of magnitude $T_3 = 65 \text{ N}$. If $m_1 = 12 \text{ kg}$, $m_2 = 24 \text{ kg}$, and $m_3 = 31 \text{ kg}$, calculate:

- a) the magnitude of the system's acceleration
- b) The tension T_1 , and
- c) The tension T_2



Check points: 1, 2, 3, and 4

Problems: 2 (a, b), 4, 51

Chapter 6: Force and Motion II

Check points: 1, and 2

Problems: 7, and 44

Chapter 7: Kinetic Energy and Work

Check points: 1, and 2

Problems: 15, 26, and 45