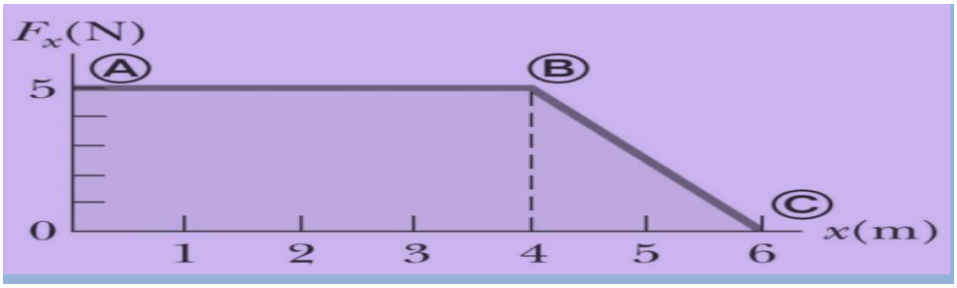
# Chercher secondary school

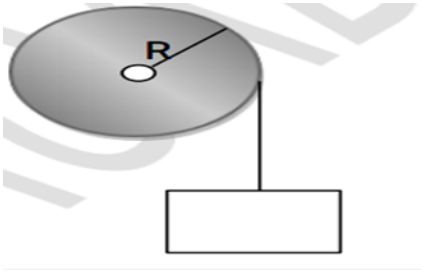
## Physics Work Sheet For Grade 11th From Unit 4- 8

1. A force acting on a particle varies with x as shown in Figure below. Calculate the work done by the force on the particle as it moves from x=0 to x=6.0 m.




2. A sphere of mass 1kg is moving on frictionless horizontal table with velocity v. It strikes against a spring with a spring constant of 100N/K. If the spring compressed by 2m then, what is the velocity of the sphere?

3. An object with a mass of m = 2.0 kg is attached to the free and of a light string wrapped around a pulley of radius R = 0.50 m and moment of inertia I = 0.5 kg m2. The pulley is free to rotate in a vertical plane about a fixed frictionless axis passing through its center as shown in Figure below. The suspended object is released from rest at 3 m above the floor.




What is the angular momentum of the pulley at the time when the object strikes the floor?

4. In what condition radial force on body is Constant and varies?

5. A wheel starts rotating at 1.2 Hz and reaches 1.8 Hz in 5 seconds. Calculate the angular displacement it covers within 5 seconds?

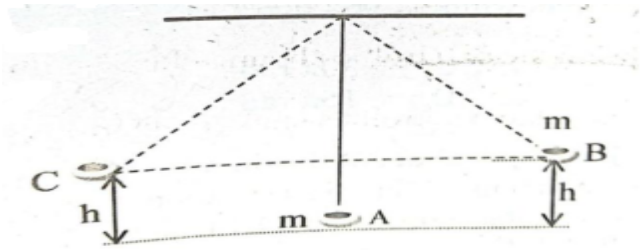
6. A pendulum shown in the figure below has 2.5 m length and mass m. When it pass



*Set By: Sufiyan H.*



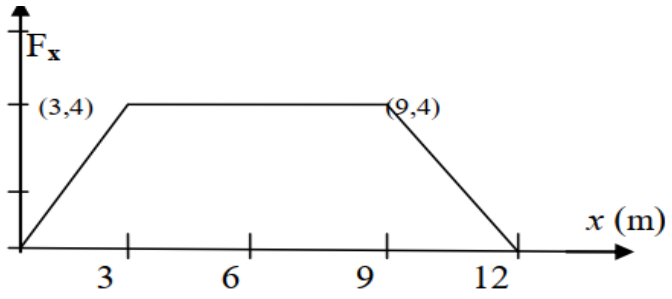
point A, its mass has a speed of 2.0 m/s. (neglect the air resistance)




What is the height of the pendulum at displacement positions B and C ?

**7.** A 2kg particle moves in the Xy plane has a velocity V=(3i+4j)m/s . what is the angular when its position vector is r=(i-2j)m ?

**8.** A boy pushes a block over 12 m distance within 6 seconds. The force applied by the boy Varies as shown in the diagram below. What is the average power loss by the boy?



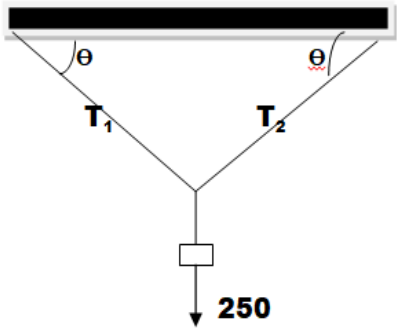

**9.** A force acts on a 4kg particle is in such away that the position of the particle as a function of time is given by $x = 6t-7t^2$. What is the work done by the force during the first 3 seconds?

**10.** A physics student runs up a stair case at a constant speed. What is the KE, PE and TME of students? (Express as increase , Decrease or remain the same)

**11.** A particles of mass 0.2kg whirls in a horizontal circle of radius 0.4m with a frequency of 5Hz. What is the angular momentum of the particles?

**12.** The system below is in equilibrium. A 250N object is suspended by two cords as shown in figure below where Θ=30°. Determine tensions T1 and T2 through the two

cords?



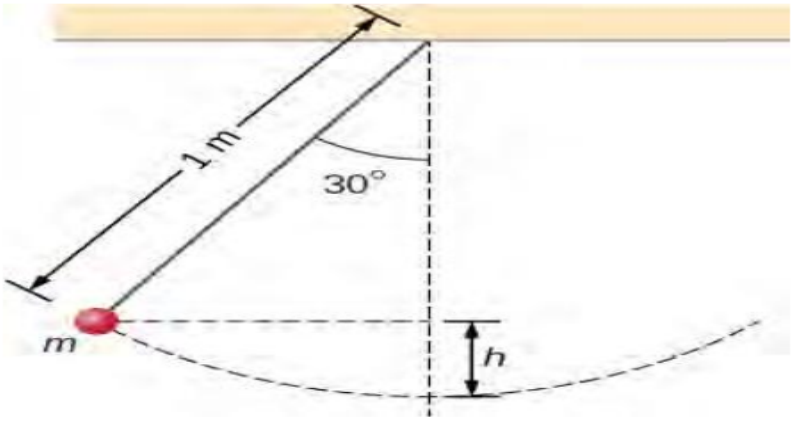

**13.** A satellite revolves around the earth in a circular orbit of radius $r=4x10^{16}m$. Calculate the period of the satellite

**14.** Compare and discuss about conservative and dissipative forces

**15.** A bowling ball of mass M and radius R, whose moment of inertia about its center is MR2, rolls without slipping along a level surface at speed V. What is the maximum vertical height to which it can roll it ascends an inclined? ( express h in terms of V)

**16.** Explain briefly the difference between stable and unstable equilibrium

**17.** A particle of mass m is hung from the ceiling by a massless string of length 1.0 m, as shown in Figure below. The particle is released from rest, when the angle between the string and the downward vertical direction is 30°. What is its speed when it reaches the lowest point of its arc?




**18.** The coordinates of the positions of particles of mass 7, 4 and 10 *kg* are (1, 5, 3), (2,5,7) and

(3,3,1)*cm* respectively. Find the position of the center of mass of the system

**19.** A wire1m long and radius 1mm stretches 0.6mm when a load of 20kg hangs from it.





Calculate the

a). stress,

b). strain,

c). Young's Modulus

d). force constant.

20. What are the differences between static and dynamic equilibrium?