CLASS 9^{TH} WORK AND ENERGY Numerical problem

1. A force of 10N causes a displacement or 2m in a body in its own direction. Calculate the work done by force. 20j)
2. How much force is applied on the body when 150joule of work is done in displacing the body through a distance of 10m in the direction of force?(15 N)
3. A body of 5kg raised to 2m find the work done(98j)
4. A work of 4900j is done on road of mass 50 kg to lift it to a certain height. Calculate the height through which the load is lifted. (10m)
5. An engine work 54,000J work by exerting a force of 6000N on it. What is the displacement of the force . (10m)
6. A force of 10N acting on a body at an angle of 60^0 with the horizontal direction displaces the body through a distance of 2m along the surface of a floor. Calculate the work done. Now let the force or pulling act on the body makes an angle of 30^0 with the horizontal. What is the value of the force to displace the body through 2m along the surface of the floor?
   ($Cos60^0 = 1/2$.$Cos\ 30^0 = \sqrt{3}/2$ ans. 10 J, 5.78 N)
7. A force of 5N acting on body at angle of $30^0$with the horizontal direction displace it horizontally through of distance of 6 m .
   Calculate the work done. ($15\sqrt{3}$ J)
8. A body of mass 2kg is moving with a speed of $20ms^{-1}$
   Find the kinetic energy. (400J)
9. A moving body of 30kg has 60 J of KE. Calculate the speed.
10. A hammer of mass 1kg falls freely from a height of 2 m .Calculate (I) The velocity and (II) The ke. Of the hammer just before it touches the ground. Does the velocity of hammer depend on the mass of hammer? ($6.26m^{-2}$, 19.6 J)
11. Calculate the energy posses by a stone of mass 10kg kept at a height of 5m If $196x10^2$ J of energy were used to raise a 40kg boy above the ground, how high would he be raised? (50m)

12. Calculate the change that should be affected in the velocity of a body to maintain the same KE , if mass of the body is increased to 4 times (half the original velocity)
13. A machine does 192 J of work in 240Sec. What is the power of the machine? (8w)
14. A weighting 50kg runs up a hill rising himself vertically 10m in 20Sec. Calculate power. given $g=9.8m^{-1}$ (245w)
15. A 1000w oven is used everyday for 90 min. Calculate the unit of electrical energy oven consume in 30days.(45 unit.)