REVIEW FOR FINAL SHEET #1
Work and Energy

Equations: Work = F•d $g = 10\ m/s^2$

Gravitational PE = mgh

Kinetic Energy = $1/2\ mv^2$

Power = Work/time P = W/t 1HP = .75 kW

Conservation of Energy --- $\Delta KE = \Delta PE$

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1. If you push an object twice as far while applying the same force, you do
   A. twice as much work B. four times as much work
   C. the same amount of work D. less work

2. If you push an object with twice the work input for twice the time, your power input is
   A. twice as much B. half as much
   C. the same amount as half the work in half the time

3. Worker A does a job quickly. Worker B does the identical job slowly. Both jobs require the same amount of work but different amounts of
   A. energy B. power
   C. A and B D. none of the above

4. Exert 10 N of force over a distance of 5 m in 2 s, you deliver a power of
   A. 100 W B. 25 W
   C. 4 W D. 1 W

5. Which requires more work, lifting a 50 kg sack vertically 2 m or lifting a 25 kg sack vertically 4 m?
   A. lifting the 50 kg sack B. lifting the 25 kg sack
   C. both the same

6. It takes 40 J to push a large box 4 m across the floor. Assuming the push is in the same direction as the movement, how much force was needed to push the box?

A. 4 N B. 10 N

C. 40 N D. 160 N

7. A 2 kg ball is held 4 m above the ground. What is the approximate potential energy of the ball with respect to the ground?

A. 8 J B. 20 J

C. 80 J D. 5 J

8. A car moves 4 times as fast as another identical car. Compared to the slower car, the faster car has

A. 4 times the KE B. 8 times the KE

C. 12 times the KE D. 16 times the KE

9. A person is holding a 200 N block over his head. It is staying 1.2 m high. He is doing _____ of work.

A. 240 J B. 240 N

C. 120 J D. 0 J

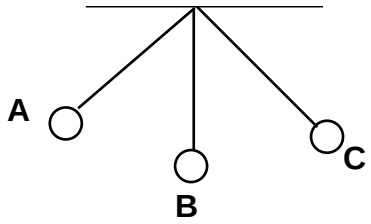
10. A diver with a mass of 50 kg steps off a diving platform which is 10 m above the water. The diver hits the water with a kinetic energy of

A. 10 J B. 500 J

C. 510 J D. 5000 J

Use this for the next three questions:

The pendulum is released at point A.



11. The PE is greatest at point _____

A. A B. B

C. C D. Between A and B

12. The KE is greatest at point _____

A. A B. B

C. C D. Between A and B

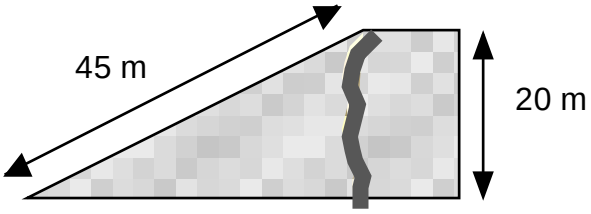
13. Energy is being converted from kinetic into potential

A. between points A and B B. Between points B and C

C. Between points A and C D. at point B

Use the following for the next 3 questions

A person with a mass of 60 kg goes up a 20 m high hill. He can climb a rope straight up the hill (20m) or he can use a 45 m long path.



14. The work required to go up the 20 m rope would be

A. 1200 J B. 11,760 J

C. 26,460 J D. 2700 J

15. The work required to go up the 45 m path would be

A. 1200 J B. 11,760 J

C. 26,460 J D. 2700 J

16. The force he had to apply when going up the path would be

A. 588 N B. 60 N

C. 441 N D. 261 N