Blizzard Day 2

Number of Pulleys	Resistance (N)	Effort Force (N)	MA
1 (fixed)	20	20	1
1 (movable)	20	10	2
2	20	10	2
3	20	6.7	3
4	20	5	4

Please use the table above to answer the following:

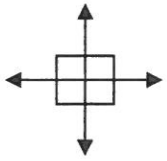
___12. Having a mechanical advantage of 4 means…

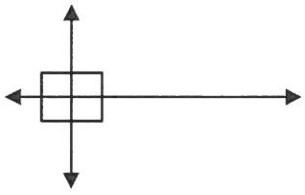
a. you have to pull 4 times as hard to lift the weight
b. your effort force will be multiplied by 4 so you can lift 4 times as much
c. you are using 8 pulleys instead of 20 pulleys
d. a movable pulley will give less mechanical advantage than a fixed pulley

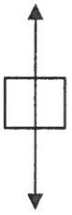
13. As the number of pulleys was increased, the effort force _____ Back up your answers with data!

___14. A movable pulley gave…

a) Same mechanical advantage as fixed since they are both just one pulley
b) Half the mechanical advantage as fixed and required more effort force
c) Twice the mechanical advantage as a fixed and required more effort force
d) Twice the mechanical advantage as a fixed pulley and required less effort force

1) 

2) 

3) 

Examine the pictures above to answer the following:

___15. Which sketch would show the box accelerating to the right?

a.) Box #1, because the net force is zero
b.) Box #1, because the box will accelerate in the direction of the greater force
c.) Box #2, because the net force is zero
d.) Box #2, because the box will accelerate in the direction of the greater force

16. Extended Response: Which box could be moving at a constant velocity? Explain how! (5pts)

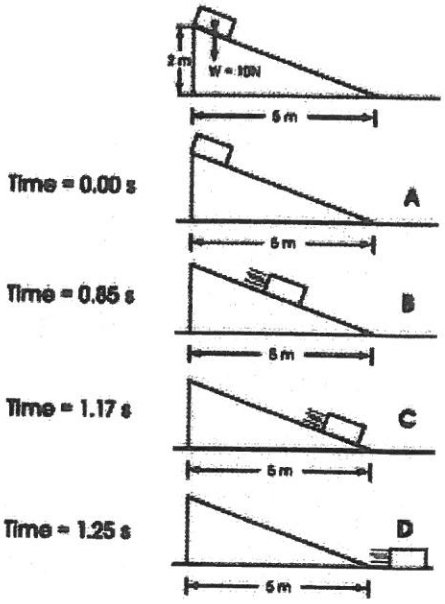
Use the sketches to answer the following. Assume the incline to be frictionless.

___17. At what time does the box have the most Kinetic Energy?

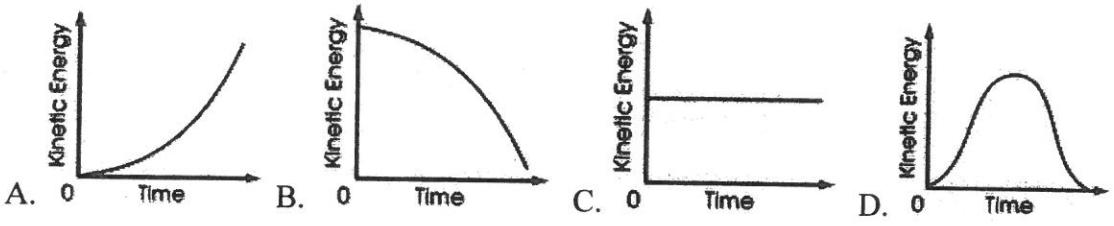
a. 0.00 sec
b. 0.85 sec
c. 1.17 sec
d. 1.25 sec

___18. The total energy of the box is…
a. always the same
b. negative at point D
c. increasing with time
d. zero before the box is released

___19. Where is the potential energy of the box the greatest? The PE is…
a. constant throughout the motion
b. greatest at the top of the incline
c. greatest midway along the incline.
d. greatest at the bottom of the incline



___20. Which graph below shows the Kinetic Energy of the cart starting at the top of the incline and ending at the bottom of the incline?



___21. The weight of the box used in the experiment is 10 N as illustrated in the figure. The weight of the box is a measure of the
a. velocity of the box while sliding
b. friction between the air and the box
c. kinetic energy at the top of the incline
d. force acting on the box due to gravity

22. Should the PE at the top of the ramp equal the KE at the bottom of the ramp? Explain completely using KE, PE, and the Laws of Thermodynamics!!! (extended response) (10pts—2pts for each correct fact—relate the PE and KE!)