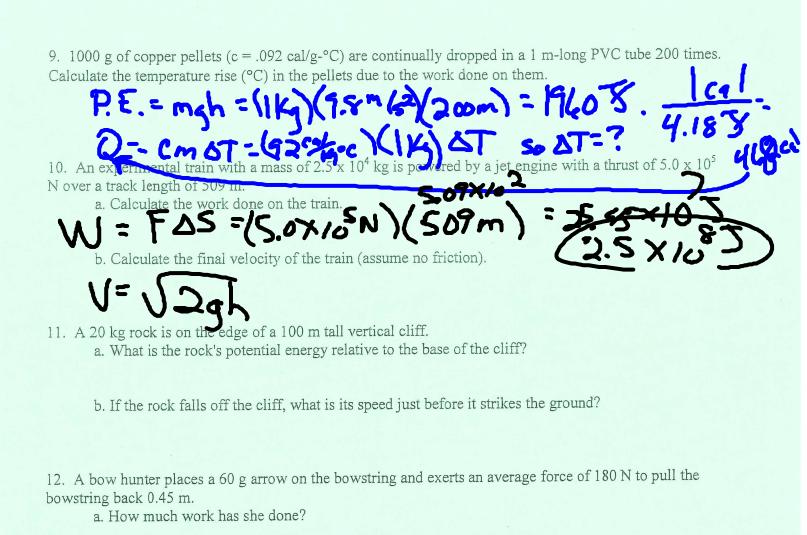
WORK-ENERGY PROBLEM WORKSHEET

	1. The third floor of a house is 8 m above street level. How much work is needed to move a 150 kg refrigerator to the third floor?
	2. If Stan does 176 J of work lifting himself 0.30 m, what is Stan's mass?
۱4 ۲ -	3. Lee pushes a 20 kg box 10 m across the floor with a horizontal force of 80 N. How much work does Lee do? Solvential force of 80 N. How much work does Lee do?
N -	4. Sau-Lan, with a mass of 52 kg, rides the up Quarter at Ocean Park in Hong Kong, the world's longest. If the escalator has a length of 227 m and angle of 31°, calculate the work done by the escalator to lift Sau-Lan.
	5. A librarian lifts a 2.2 kg book from the floor to a height of 1.25 m, carries the book 8.0 m to the stacks, and places the book on a shelf 0.35 m above the floor. How much work is done on the book?
	6. A horizontal force of 805 N is needed to drag a crate across the floor with a constant speed. If D rope used to drag the crate makes an angle of 32° with the floor: a. Calculate the force applied along the rope.
(0 X:	b. Calculate the work done to pull the crate a distance of 22m. c. If the job is done in 8 seconds, how much power is developed?
	7. Mary weighs 505 N. If she walks down a flight of stairs to a level 5.5 m below, what is the change in her potential energy?
	8. Toni has a mass of 45 kg and is moving with a speed of 10 m/s.

b. If Toni's speed changes to 5 m/s, what is her kinetic energy? Compare to part a answer.

a. Calculate her kinetic energy.



b. If the bow is 80% efficient, at what speed does the arrow leave the bow?

c. If fired vertically into the air, what height would the arrow achieve (assume 80% efficiency)?

b. Calculate the kinetic energy of the bullet and gun after firing. Is mechanical energy conserved?

13. A 3.0 kg gun, resting on a frictionless surface, fires a 12 g bullet with a muzzle velocity of 410 m/s. a. Calculate the momenta of the bullet and gun after firing. Is momentum conserved?

14. A superball has a coefficient of restitution of 0.78. If it is dropped from a height of 2 m above the

15. If you could convert matter to energy with 1% efficiency, how much energy would 1 g of water

floor, to what height will it rebound?

produce?