Name:

Work worksheet

(get it?)

1. Determine whether the following situations involve work or not. Justify your reasoning
    a. Humpty Dumpty sat on a wall
    b. Humpty Dumpty had a great fall
    c. An evenly matched tug-of-war
    d. A crane lifting a car
    e. Parachute slowing down the descent of a parachutist

2. A stranded motorist pushes a 1500 kg car with a force of 200 N to the side of a road, moving it a distance of 3 m. What work has been done?

3. A 1.5 kg trolley is pushed through a distance of 3 m by a force of 0.5 N. The trolley reaches a velocity of 1.3 m/s. What work does the force do?

4. A force of 10 N acts on a 20.0 kg mass and accelerates it over a distance of 5.0 m. What work is done on the mass?

5. A boy pushes his toy car across the floor by placing a force on the 50g toy. The force is at 30° to the horizontal. If the boy applies 100 N and pushes it 40 cm, how much work is done?

6. A girl runs along the beach with a kite, which is flying at 30° to the beach. If the work is 100kJ and the tension in the string is 500 N, how far does she run?

7. An 80.0 kg person carries a 25 N package up a flight of stairs. The vertical height of the stairs is 10.0 m. How much work is done?

8. A force of 1800 N is needed to keep a piano from sliding down a 10.0 m ramp. How much work is done?

9. A child pulls a sled through the snow with a force of 45 N applied to the rope at an angle of 30.0° with the horizontal. How much work is done if they moved 15 m?

10. It takes 7500 J of work to slide a crate a distance of 15 m across a floor. A force of 650 N was applied to the rope. What angle did the rope make with the ground?

11. It took a force of 250 N to pull a crate weighing 765 N across the floor. The work done was 3500 J. How far was the crate moved?