

Name: _____

Mr. Croom's Physics

Date: _____

Chapter 5: Work and Energy

9. An 80kg person and a 400kg elevator are lifted by a cable 15m while accelerating at 1.5m/s^2 . What is the work the lift must do to lift at this rate? What is the minimum work the lift must do to lift the elevator and the person?
10. (Giancoli, p 174 #4) A car does $7.0 \times 10^4\text{J}$ of work in traveling 2.8 km at a constant speed. What was the average retarding force (from all sources) acting on the car?
11. (Giancoli, p 174 #5) How high will a 0.325 kg rock go if thrown straight up by someone who does 115J of work on it? Neglect Air resistance.
12. (Giancoli, p 174 #7) What is the minimum work needed to push a 1000kg car 200m up a 17.5° incline ignoring friction? If friction is present, what is the force required if the coefficient of friction is 0.25.

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13. (Giancoli, p 174 #8) A grocery cart with mass of 18 kg is pushed at a constant speed along an aisle by a force of 12N. The work done in each 15m long aisled 75J. Assuming the force is applied at an angle, find the angle?
14. (Giancoli, p 174 #10) A 280 kg piano slides 4.3 m down a 30° incline and is kept from accelerating by a man who is pushing back on it parallel to the incline. The effect coefficient of kinetic friction is 0.4. Calculate the force exerted by the man? The work done by the man on the piano, the work done by the friction force, the work done by the force of gravity, and the net work don on the painter.