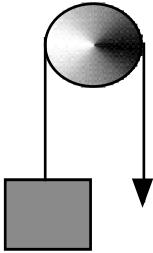


## Basic Pulley Practice I

Full sentence answers are not necessary, but you answer should completely answer the question.

### Questions



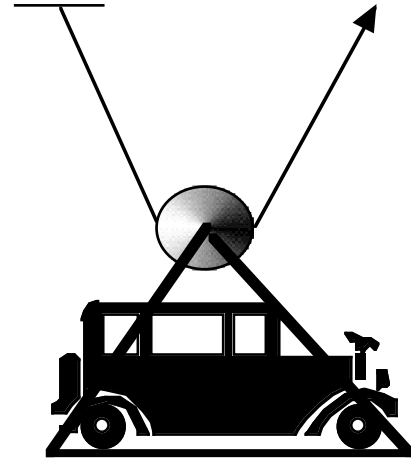
1. **Assume the mass of the block is 150 grams.**
  - a) What kind of pulley is in this diagram?
  - b) Where in the diagram is the force we call “effort?”
  - c) Where in the diagram is the force we call “resistance?”
  - d) How much force must you pull down with at the arrow to lift the block in this diagram?
  - e) Does this systems reduce effort? Explain.
  - f) Does this system reduce work? Explain.
  - g) If you pull down a distance of 5 handspans, how far will the resistance move?
  - h) Which direction will the resistance move if you pull down in the direction of the arrow?
  - i) If you pull down a distance of 3 m how far will the resistance move?
  - j) If it took 32 N to lift the box and the box weighed 40 N, what would the “efficiency” of the system be?
  - k)(i) If you pulled a distance of 3 m with a force of 5 N, on a box that weighed 4.5 N, how far would the box move?
    - (ii) How much work would go into the pulley?
    - (iii) How much work would you get out of the pulley?
    - (iv) Calculate the efficiency of this pulley.

**Unit: Machines**

**Pulley Basics**

**2. Assume the mass of the car is 10,000 N.**

- a) What kind of pulley is in this diagram?
- b) Where in the diagram is the force we call “effort?”
- c) Where in the diagram is the force we call “resistance?”
- d) Which direction do you need to pull to lift the car?
- e) How much force must you pull with to lift the car in this diagram?
- f) Does this systems reduce effort? Explain.
- g) Does this system reduce work? Explain.
- h) If you pull a distance of 25 hand-spans, how far will the resistance move?
- i) Which direction will the resistance move if you pull in the direction of the arrow?
- j) If you must move the car 10 m how far will the effort have to pull?
- k) If you pulled the rope a distance of 4 meters with a force of 6,500 Newtons, what is the efficiency of this system?



**Unit: Machines**

**Pulley Basics**

**3. Assume the mass of the I beam is 1600 N.**

- a) What kind of pulley is in this diagram?
- b) Where in the diagram is the force we call “effort?”
- c) Where in the diagram is the force we call “resistance?”
- d) Which direction do you need to pull to lift the I-beam?
- e) How much force must you pull with to lift the I-beam in this diagram?

f) Does this systems reduce effort? Explain.

g) Does this system reduce work? Explain.

h) If you must lift the beam a distance of 24 feet, how far will the effort have to move?

i) Which direction will the resistance move if you pull in the direction of the arrow?

j) If you pull a distance of 10 m how far will the resistance move?

k) If you pulled the rope a distance of 4 meters with a force of 850 N, what is the efficiency of this system?

