

Name:

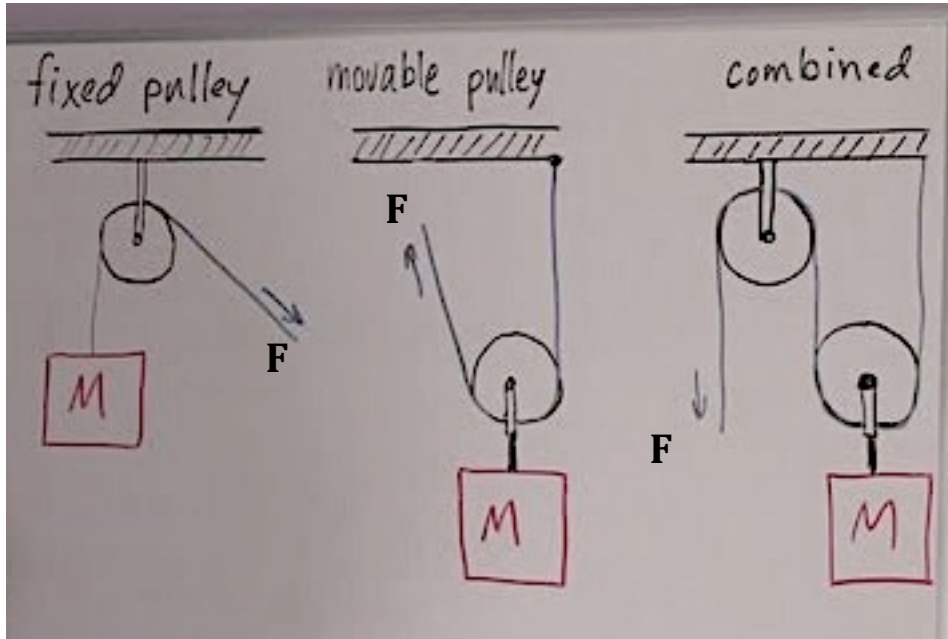
HR:

AP PHYSICS Unit 5. worksheet1.

**To be submitted**

**Mechanical advantage of a pulley is a measure of reduction of the force required to lift a mass  $m$ . The pulleys that help reducing this lift force have better M.A and are generally movable pulleys.**

**Here are the definitions:**



**A fixed pulley does not reduce the force that is required to lift an object and is not advantageous.**

1) Explain how the movable pulley in the 2<sup>nd</sup> and 3<sup>rd</sup> picture above might reduce minimum force  $F$  required to lift the mass  $M$  comparing to the 1<sup>st</sup> picture.

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2) Now Consider the pulley system we considered yesterday (given below).

- a. Point out which one s are movable pulleys and which are fixed.
  
- b. We found that if mass  $m = 10 \text{ Kg}$  in Fig 1 below then the mass in question has to be  $40 \text{ Kg}$  so that the whole system is in static equilibrium. Answer the questions below:
  - What is the minimum force  $F$  above which the masses in each of the figures (b) and (c) start to lift?
  
  - Which mass has a better Mechanical advantage and why?

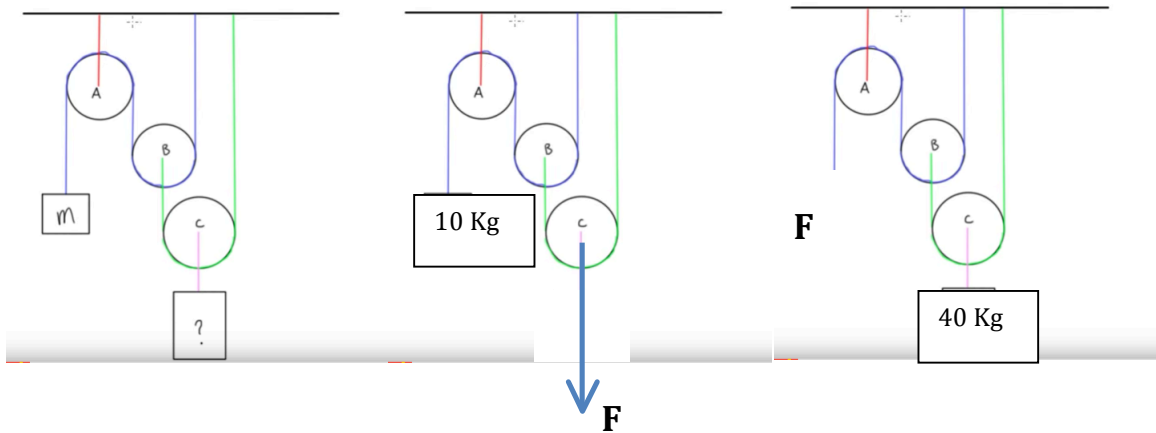


Fig (a)

(b)

(c)