

Simple Machine/Work

Chpt 10 rev 7

Physics

- A 97.0 kg sled is pulled up a 15 m ramp that's at a 22° angle. A) What effort force is applied to the sled if there is no friction?. B) What is the effort force if the ramp has an efficiency of 81%?...b) How much Power is consumed (81%) if it took 8.0 s?
- A steam turbine has an efficiency of 77.0% and is used to drive a hydraulic pump that lifts boats. If the pump has an efficiency of 67.0%, what velocity will it lift an 767 kg boat if 4.55 KW of power are available to the turbine?
- A lever has an efficiency of 95.0%. a) What work is needed (W_i) to lift a 44.5 kg mass 0.667 m? b) If 95 N of force are applied to the lever, how far is the effort force exerted? C) What is the AMA and IMA?
- A ramp is 9.90 m long and 3.40 m high.. a) What force is needed to slide a 45 kg box to the top if friction is ignored?...b) What is the IMA of the ramp?...c) What is the AMA if the efficiency is 76.0%?...d) What would the new F_e be with the efficiency of 76.0%?
- Find the W_i , W_o , AMA, IMA, and Eff. (and any other unknowns) of the following machines

