

A Level Physics A
H556/01 Modelling physics

Question Set 4

- 1 Fig. 16 shows a hydraulic jack used to lift a car which has a mass of 1200 kg. A mechanic exerts a downwards force of 400 N on the handle of the jack, moving it 80.0 cm downwards. As he moves the handle, the car rises 2.0 cm.

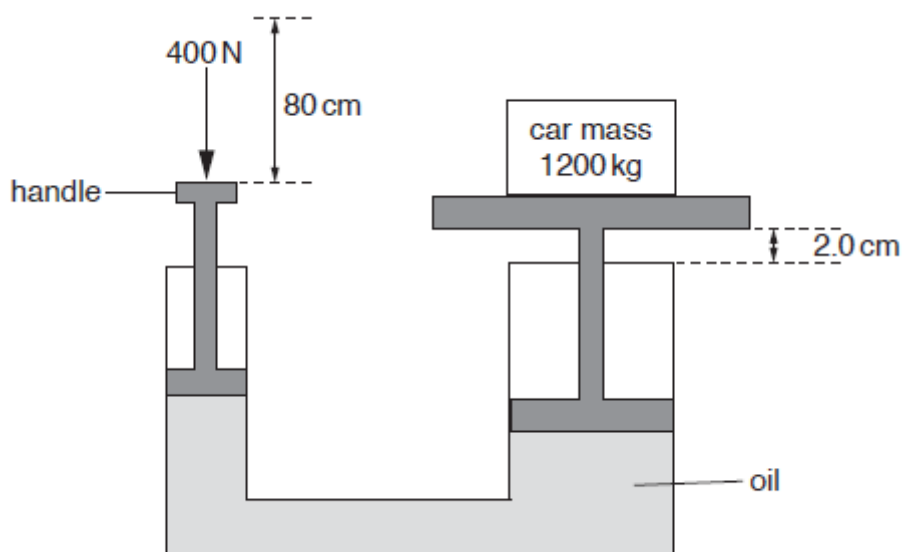


Fig. 16

- (a) Calculate the work done by the 400 N force exerted by the mechanic.

work done = J [2]

- (b) Calculate the ratio

$$\frac{\text{speed of handle moving down}}{\text{speed of car moving up}}$$

ratio = [2]

- (c) Calculate the useful work done on the car and hence the percentage efficiency of the jack.

efficiency =% [2]

Total Marks for Question Set 4: 6

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