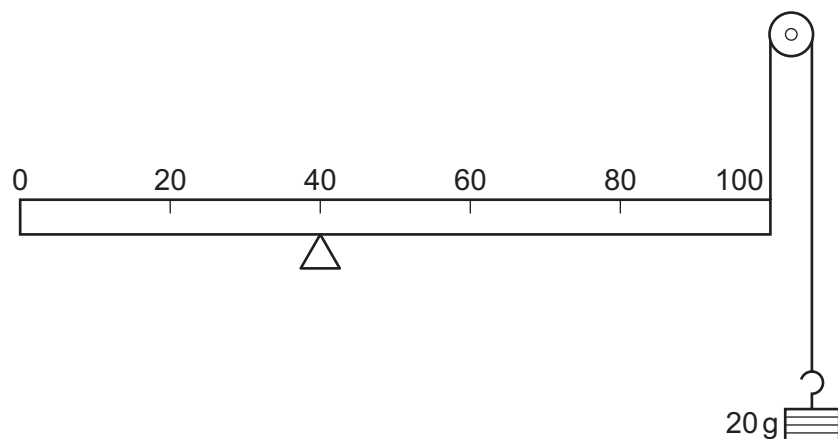
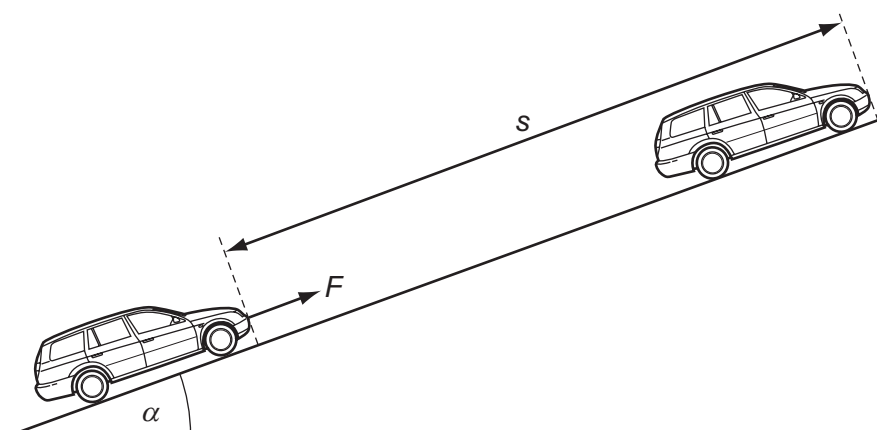


- 14 A uniform metre rule of mass 100 g is supported by a pivot at the 40 cm mark and a string at the 100 cm mark. The string passes round a frictionless pulley and carries a mass of 20 g as shown in the diagram.



At which mark on the rule must a 50 g mass be suspended so that the rule balances?

- A 4 cm                      B 36 cm                      C 44 cm                      D 64 cm
- 15 A constant force  $F$ , acting on a car of mass  $m$ , moves the car up a slope through a distance  $s$  at constant velocity  $v$ . The angle of the slope to the horizontal is  $\alpha$ .



Which expression gives the efficiency of the process?

- A  $\frac{mgs \sin \alpha}{Fv}$                       B  $\frac{mv}{Fs}$                       C  $\frac{mv^2}{2Fs}$                       D  $\frac{mg \sin \alpha}{F}$

Space for working