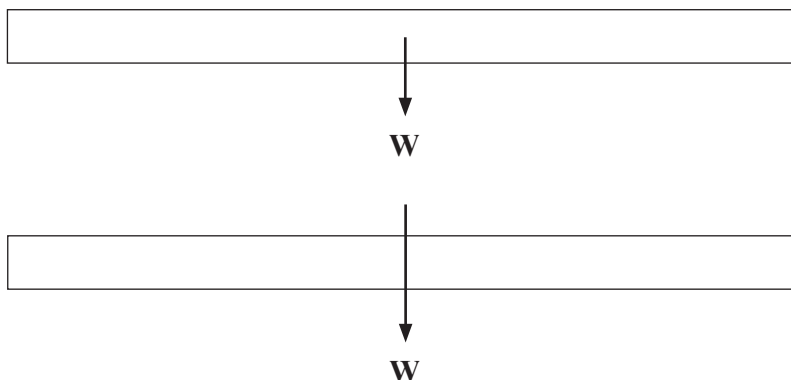


- A2** (a) Position marked in middle of ruler (by eye) with arrow vertically downwards  
N.B. arrow must touch ruler – may be above or below

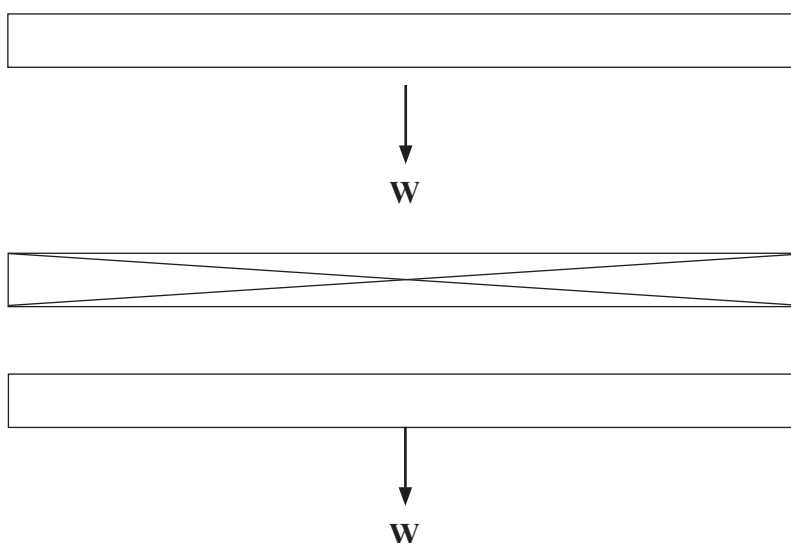
[1]

*Examples:*

*Acceptable answers:*



*Not acceptable answers:*



- (b) Reading to 2 sig. figs. i.e. to resolution of Newton meter (allow to  $\frac{1}{2}$  scale division) with unit (N) [1]
- (c) Attempt to equate moments even if incorrect [e.g. Newton meter  $\times 90 = \text{weight} \times 50$ ] (1)  
Correct equation and rearrangement (1)  
Weight  $\pm 10\%$  of centre value (1)  
(no e.c.f. allowed within the question) [3]
- (d) Weight calculated correctly (1)  
Unit (N) in **both** (c) and (d) (stand alone mark i.e. can be awarded even if weight values are incorrect) (1) [2]
- (e) (c) lower [%], larger value on Newton meter  
N.B. no e.c.f. allowed [1]

Total [8]