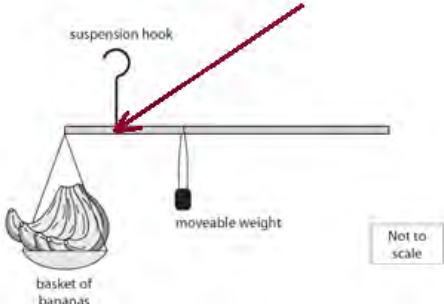


| Question number | Answer | Notes | Marks |
|-----------------|--|--|-------|
| 7 (a) | <p>X marked at the point of suspension;</p>  | allow cross in line with hook but just above or below bar | 1 |
| (b) | (at equilibrium, sum of) moment(s) anticlockwise = (sum of) moment(s) clockwise; | | 1 |
| (c) | <p>substitution into principle of moments;</p> <p>rearrangement;</p> <p>evaluation;</p> <p>e.g.</p> $14.1 \times \text{weight of bananas} = 84.6 \times 1.25$ <p>(weight of bananas =) $\frac{84.6 \times 1.25}{14.1}$</p> <p>(weight of bananas =) 7.5 (N)</p> | <p>allow cm or m for distance units</p> <p>-1 if POT error</p> | 3 |
| (d) | <p>finding weight of one banana;</p> <p>conversion from weight to mass in kg;</p> <p>conversion to g from kg;</p> <p>e.g.</p> <p>weight of one banana = $7.5 \div 5$ (= 1.5 N)</p> <p>mass = $(1.5 \div 10)$ = 0.15 kg</p> <p>(mass =) 150 (g)</p> | <p>allow ECF</p> <p>answer from (c) $\div 5$</p> <p>allow use of $g = 9.8$, 9.81</p> <p>allow 0.153...</p> <p>allow 153</p> | 3 |
| (e) | <p>any two from:</p> <p>MP1. use a yard-arm with a longer distance for the small weight to move along/eq;</p> <p>MP2. smaller distance from pivot to basket;</p> <p>MP3. heavier (moveable) weight;</p> | <p>ignore solutions involving adding another basket</p> <p>allow use a longer yard-arm / steel bar</p> <p>hook to basket</p> <p>allow larger (moveable) weight</p> | 2 |

Total for Question 7 = 10 marks