| Question number | Answer | Notes | Marks |
|---|---|---|---|
| 2 (a) | centre of gravity; | accept centre of mass | 1 |
| (b) | moment = force × (perpendicular) distance; | allow standard symbols and rearrangements<br>e.g. M = F × d<br>allow d, s, x for distance | 1 |
| (c) | substitution;<br>rearrangement;<br>evaluation;<br><br><br><br>e.g.<br>$92 = F_s \times 0.84$<br>$F_s = 92 / 0.84$<br>($F_s$ =) 110 (N) | <br><br><br>-1 for POT error<br>2 marks max. if incorrect distance used e.g. 0.42 m giving answer of 219 (N)<br><br><br><br>allow 109.5, 109.52… | 3 |
| (d) | idea that every force has an equal and opposite reaction; | however expressed<br>allow “action” for force | 1 |
| (e) | same value as (c);<br><br>down; | allow ecf from (c)<br>expected answer is 110 (N) | 2 |

Total for Question 2 = 8 marks