

Question Number	Answer	Additional guidance	Mark
5(a)	□ B centripetal force The only correct answer is B (correct term for circular motion) A is not correct – incorrect term C is not correct – incorrect term D is not correct – incorrect term		(1)

Question Number	Answer	Additional guidance	Mark
5(b)(i)	single arrow towards centre of the circle applied to the object (1)	judge by eye	(1)

Question Number	Answer	Additional Guidance	Mark
5(b)(ii)	an explanation including velocity is a vector (1) (because) direction changes (1)	velocity has (magnitude and) direction / velocity is speed in a (certain) direction	(2)

Question Number	Answer	Additional guidance	Mark
5(c)(i)	substitution in $v^2 - u^2 = 2ax$ (1) $24^2 - 7.6^2 = 2 \times 3 \times x$ rearrangement (1) $(x =) \frac{24^2 - 7.6^2}{6}$ evaluation (1) 86 (m)	accept rearrangement and substitution in either order allow numbers that round to 86 (m) award full marks for the correct answer without working	(3)

Question Number	Answer	Additional guidance	Mark
5(c)(ii)	recall and substitution (1) $(a = \frac{v-u}{t}) \quad 3.0 = \frac{24-7.6}{t}$ rearrangement (1) $t = \frac{v-u}{a}$ OR $(t =) \frac{24-7.6}{3.0}$ evaluation (1) 5.5 (s)	Allow alternative method: average speed = distance / time i.e. $15.8 = 86(.37) / \text{time}$ $(t =) 86(.37) / 15.8$ allow numbers that round to 5.5 (s) OR numbers that round to 5.4 if using alternative method and distance = 86 award full marks for the correct answer without working no marks for $t = d / (v-u) = 86(.37) / (24-7.6)$ giving 5.3 s as an answer	(3)

(Total for Question 5 = 10 marks)