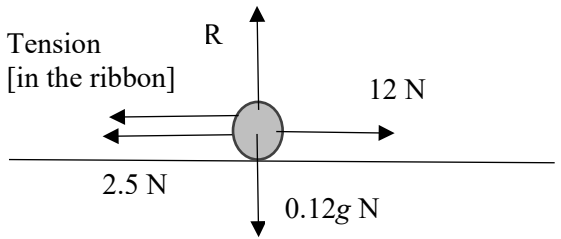
Question			Answer	Marks	AOs	Guidance	
9	(a)	(i)	Total mass 390 g (0.390 kg) $12 - 4 \times 2.5 = 0.390a$	**M1** **A1** **[2]**	**3.3** **3.3**	Newton's second law; condone missing or incorrect resistance or incorrect total mass Fully correct equation need not be simplified	Allow for $T - R = ma$ if the correct substitution of values seen in part 9aii
9	(a)	(ii)	5.13 m s^{-2}	**B1** **[1]**	**1.1b**	cao	
9	(b)			**B1** **B1** **B1** **[3]**	**1.1b** **1.1b** **1.1b**	Correct vertical forces 12 N and 2.5 N correctly drawn and labelled with no extra forces Tension in the ribbon correctly drawn and labelled	Allow 'weight' or $120g$ N oe for $0.12g$ N Allow 'resistance' for 2.5 N and 'tension' for 12 N providing it is clear that the tension in the string is distinct from the tension in the ribbon
9	(c)		N2L for the head only $12 - 2.5 - T = 0.12a$ OR N2L for the three body sections together $T - 3 \times 2.5 = 0.270a$ $T = 8.88$ N	**M1** **A1** **[2]**	**1.1b** **1.1b**	N2L with correct mass and their acceleration. Allow missing or incorrect resistance cao	Allow for mass in grams if same error seen in part (a) Allow A1 for correct answer from consistent use of grams