Question Number	Scheme	Marks
4(a)	Correct use of *suvat* to form an equation in *h* only $7^2 = 0^2 + 2gh$	M1
	$(h =)\ 2.5$	A1
		(2)
4(b)	Correct use of CLM with common velocity after impact	M1
	$9\times 7 = 9v + 1.5v \quad (v = 6)$	A1
	Correct use of *suvat* with their *v* to form an equation in *a* only	M1
	$0^2 = 6^2 + 2a(0.12) \qquad (a = -150)$	A1
	Correct use of N2L with their acceleration	M1
	$10.5g - R = 10.5\ (-150)$	A1
	$R = 1680 \quad \text{or } 1700$	A1
		(7)
		[9]

Notes	
Note: only penalise use of 9.81 once per whole question, only penalise over or under accuracy once per whole question.	
4(a)	
M1	Use of *suvat* to form relevant equation(s) to solve for *h*
A1	Correct answer, must be positive and a decimal.
4(b)	
M1	Use CLM to find the speed of the blocks after impact. Dimensionally correct equation. Must have a common velocity after impact.
A1	Correct unsimplified equation in one unknown
M1	Correct use of *suvat* to form an equation in *a* only. Allow $\pm a$. Allow with their *v* for the method mark where *v* is a calculated value from CLM. Condone use of 12 or 1.2 instead of 0.12. M0 if using $u = 7$.
A1	Correct unsimplified equation in $\pm a$ only
M1	Correct use of N2L to form an equation in *R*. Allow with *a* or their calculated *a* for the method mark but M0 if $a = \pm g$
A1	Correct unsimplified equation in *R* only.
A1	Correct answer. Must be positive with 2sf or 3sf. A0 if $g = 9.81$ is used unless already penalised in this question.
(b) ALT1	**Note**: You may see an energy approach for last 5 marks (WME02 candidate).
M1 M1	Energy equation with all required terms present and no extra. Each term must have the correct structure. Condone sign errors and 12.

	KE + GPE = work done $\frac{1}{2}(10.5)6^2 + (10.5)g(0.12) = 0.12R$	
A1	Correct equation with at most one error	
A1	Correct equation	
A1	1680 or 1700 , correct answer, 2 or 3 sf	