

Question number	Answer	Accept	Reject	Marks
9 (a) (i)	momentum = mass x velocity;			1
(ii)	Substitution into correct equation; Calculation; e.g. momentum = $0.15 \times 6 = 0.9$ ;; Unit: kg m/s;	kg ms <sup>-1</sup> Ns		3
(iii)	$0.9 = (0.15 + 0.05) \times v$ ; $v = 0.9 \div 0.2 = 4.5$ (m/s);	Ecf from 8(a) (ii) (i.e. answer for 8aii $\div$ 0.2 or answer for 8aii x 5)		2
(b)	The student is wrong; Because variables are not controlled; e.g. mass of cloth different, mass of (other) tins different, cloth velocity not measured	Student is right if the mass of the second cloth is 0.3 kg;;  Student is right if the momentum of the second cloth is 1.8 kg m/s;;  (assuming all tins are 0.05 kg/ throws new cloth with exactly the same velocity)		2

**Total 8 marks**

**PAPER TOTAL: 60 MARK**