Question Number	Answer		Mark
12(a)	Waves have been <u>reflect</u>ed by the <u>water</u> surface	(1)	**2**
	Transmitted wave and reflected wave interfere **Or** waves travelling in opposite directions interfere	(1)	
	(For MP2, allow 'superpose' for 'interfere') (For MP2, do not allow 'opposite waves')		
12(b)(i)	Use of $v = f\lambda$	(1)	**3**
	With λ = 4 × length of column (or see 0.772m)	(1)	
	v = 340 ms^{-1}	(1)	
	<u>Example of calculation</u> λ = 4 × length of column = 4 × 0.193 m = 0.772 m $v = f\lambda$ = 440 Hz × 0.772 m = 339.7 ms^{-1}		
12(b)(ii)	(Wave)length would be longer **Or** node to antinode distance would be longer	(1)	**2**
	This would cause the value (for the speed of sound) to be higher (than calculated value, which is therefore less accurate)	(1)	
	(MP2 dependent on MP1) (Answer can be written in the converse e.g. the wavelength used in the calculation is shorter, so the calculated speed is lower).		
	Total for Question 12		**7**