

Question Number	Answer	Mark
11a	<p>Recognises that node to node distance = $\lambda/2$ Or $\lambda = L/2$ stated (1)</p> <p>Wavelength = 0.85m (1)</p> <p><u>Example of calculation</u> Node to node distance = $\lambda/2$. String has 4 loops so total length of string is 2λ $\lambda = 1.70 \text{ m} / 2 = 0.85 \text{ m}$.</p>	(2)
11b	<p>Use of $v = \sqrt{T/\mu}$ (1) Use of $T = mg$ (1) $v = 21 \text{ m s}^{-1}$ (1)</p> <p><u>Example of calculation</u> $T = mg = 0.20 \text{ kg} \times 9.81 \text{ N kg}^{-1} = 1.96 \text{ N}$ $v = \sqrt{T/\mu} = \sqrt{(1.96 \text{ N} / 4.5 \times 10^{-3} \text{ kg m}^{-1})} = 20.9 \text{ m s}^{-1}$</p>	(3)
11c	<p>T and μ are the same Or (As f decreases,) λ increases (1)</p> <p>Speed would be the same Or There is no effect (on the speed) (1)</p>	(2)
	Total for question 11	7