

Question number	Answer	Notes	Marks
4 (a) (i)	18.7 ± 0.5 (cm);	accept any value between 18.2 and 19.2	1
(ii)	Any two of - MP1 Mention of <u>parallax</u> error; MP2 Idea of zero error; MP3 End of ruler is worn; MP4 Hook is curved; MP5 Hook stretches bands to different lengths; MP6 Bands are not close to ruler; MP7 Bands are not parallel to ruler; MP8 Bands are twisted;	Ignore human error Ignore inaccurate scale Ignore anomaly, no average, references to Hooke's law	2
(b)	Idea of a controlled variable; e.g. force kept constant temperature kept constant	Allow properties of bands, e.g. type, brand, material, thickness, elasticity, original length Ignore idea of consistent technique, e.g. using same equipment	1