



Q	Answer	Marks
1	a) 15 minutes b) 15 minutes c) 8 minutes d) 16.5 minutes (3 s.f.)	4
2	a) 31.5 minutes b) 6.14 minutes (3 s.f.) c) the standard deviation decreases: the new time is 0 from the mean, so the sum of squared deviations is unchanged but n increases	4
3	a) 2 b) 2 c) 1.93 (3 s.f.) d) 1.29 (3 s.f.)	5
4	a) 138 g b) mean 138 g (3 s.f.), standard deviation 13.7 g (3 s.f.) c) the exact masses are not known; each apple is assumed to have the midpoint mass of its class	7
5	a) 503.6 ml b) 8.31 ml (3 s.f.) c) 5 073 640	6
6	a) 5.16 minutes (3 s.f.) b) 9.41 minutes (3 s.f.) c) 50 callers	6
7	mean 61, standard deviation 6.74 (3 s.f.)	6
8	mean 54.4 cm, standard deviation 11.2 cm	5
9	a) £309 thousand (3 s.f.) b) £207 thousand c) $Q1 = 196$, $Q3 = 215$, upper limit $243.5 < 1150$, so 1150 is an outlier d) the median, because the mean is pulled up by the outlier 1150	6
10	a) $(42 + 2f)/(28 + f) = 1.6$ gives $0.4f = 2.8$, so $f = 7$ b) 1.22 (3 s.f.) c) 1	6
11	a) 17.5 °C b) 2.45 °C (3 s.f.) c) on average it was warmer in southern England (mean 21.3 °C against 17.5 °C), and temperatures there varied more (standard deviation 4.1 °C against 2.45 °C)	7
12	$a = 20$, $b = 24$	8

Full worked solutions, written out by hand, are on the solutions sheet for this topic.