



Q	Answer	Marks
1	a) positive correlation b) students who revised for longer tended to get higher marks c) h, the number of hours spent revising	3
2	a) for each 1 °C rise in maximum temperature, about 3.2 more ice creams are sold b) 76 or 77 (76.5) c) unreliable: 35 °C is outside the range of the data (14 °C to 28 °C), so this is extrapolation	4
3	a) explanatory: amount of fertiliser; response: mass of tomatoes; positive correlation b) explanatory: outside temperature; response: gas used; negative correlation	4
4	a) correlation does not imply causation: the two variables are linked but one does not have to cause the other b) the population of the town (larger towns have more cafés and more traffic)	3
5	a) engine size, x: the engine size affects the fuel economy b) for each extra litre of engine size, fuel economy falls by about 12.7 mpg c) 48.6 mpg (3 s.f.) d) it is the estimate for an engine size of 0 litres, which is impossible (and far outside the data) e) the line is y on x, so it is only designed to estimate y from a given x	5
6	a) eight crosses plotted at the points in the table b) (5, 15.8): e.g. that car had very low mileage or was in excellent condition, or the value was recorded wrongly c) strong negative correlation	4
7	a) positive correlation b) the points form two separate groups, Year 3 and Year 9; the older children have both longer feet and higher scores, so age explains the pattern, not foot length c) little or no correlation in each year group	4
8	a) °C per hour: each extra hour of sunshine is linked with a maximum temperature about 0.62 °C higher b) the estimated maximum temperature on a day with no sunshine is 13.4 °C c) 18.4 °C (3 s.f.) d) n/a means the value is not available, so that day should be removed from the data	6

9	a) £2.80 is the fixed charge (cost of a journey of 0 miles); £1.65 is the extra cost for each mile b) $y = 2.80 + 1.02k$ c) £15.04 (accept £15.10 if the unrounded gradient is used)	5
10	a) strong positive correlation b) each extra 1 mph of speed adds about 1.69 m to the stopping distance c) not suitable: the points lie on a curve that gets steeper, not a straight line d) -10.5 m; a distance cannot be negative, and 10 mph is outside the data, so the line is not valid there	6
11	a) at the beach each 1 °C rise in maximum temperature is linked with about £22 more takings b) 12.3 °C (3 s.f.) c) unreliable: 12.3 °C is below the beach data (15 °C to 30 °C), so it is extrapolation for the beach model d) £178	7
12	a) $m = 18.7 + 0.17h$ b) each extra 1 cm of height is linked with about 0.17 kg more mass c) 47.6 kg d) 195 cm is outside the range of heights in the data (extrapolation); the data are for fourteen-year-olds, not adults	8

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