



Q	Answer	Marks
1	The cost increases by £6 for each extra day of hire	1
2	There was already 20 cm of water in the tank at the start	1
3	a) 4.5 b) the number of litres in 1 gallon (4.5 litres per gallon)	3
4	a) A: 10, B: 6 b) Company A, because its line is steeper c) the fixed charge before any days: £20 for A, £50 for B	4
5	a) 2.4, the cost in pounds per mile b) $F = 2.4m + 3.5$ c) £32.30	4
6	a) 16 km/h b) the cyclist is stationary (resting at the lake for half an hour) c) 12 km/h; the gradient is negative because the cyclist is getting closer to home	4
7	a) 3 m/s^2 b) the acceleration is the gradient of the curve, and a tangent drawn by eye only approximates that gradient	4
8	a) -5°C per minute (cooling by about 5°C per minute) b) -2.5°C per minute (cooling by about 2.5°C per minute) c) the tea is closer to room temperature, so the curve is less steep and it loses heat more slowly	4
9	a) 4 m/s b) 14.4 km/h	4
10	a) £12 per hour b) £132	3
11	a) £3 b) £1.50 c) £12	3
12	a) 0.2 b) Each unit of electricity used adds 20p to the bill	3
13	a) -2 b) The depth of the water decreases by 2 cm each minute	3
14	About 2.5 metres per hour (accept 2 to 3)	4

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