

- 1 (a) Points plotted correctly on graph: –1 each error or omission
 (within one square of correct position) B3 3
- Note**
 Record 1 point incorrect as B1B0 on epen. [NB overlay for (60, 135) is slightly wrong]
- (b) Positive correlation 2
- (c) $a = 4.18$ – yield of hay per hectare if no fertilisers applied (not reliable) MW1
 $b = 0.285$ – amount of hay for each extra tonne applied MW1 2
- (d) $x = 7$ $y = 6.18$ tonnes of hay (3 s.f.) M1 W1 2
- (e) Last three terms indicate same yield, i.e. no increase in hay for increase in fertiliser. Data not linear in nature. MW1 1

2 (a) Points plotted correctly on graph: –1 each error or omission

(within one square of correct position)

B3 3

Note

Record 1 point incorrect as B1B0 on epen. [NB overlay for (60, 135) is slightly wrong]

(b) Positive correlation

2

(c) P increases by 1.51

2

- 3 (a) Points plotted correctly on graph: –1 each error 3
- (b) Positive correlation 2
- (c) A typical car will travel 7700 miles every year 2
- (d) $x = 5, y = 8.89 + 7.73 \times 5 (= 47.5 - 47.6)$ M1
 So mileage predicted is AWRT 48000 A1 3
- for substituting $x = 5$ into their final answer to (b). A1
 for AWRT 48000 (Accept “48 thousands”)

4 " (a) B1 B1 2

Note

1st B1 for at least 4 points correct (allow ± one 2mm square)
 2nd B1 for all points correct (allow ± one 2 mm square)

(b) The **points** lie reasonably close to a straight **line** (o.e.) B1 1

Note

Ignore extra points and lines
 Require reference to points and line for B1.

(c) A flight costs **£2.03 (or about £2)** for every extra **100km** or about **2p per km.** B1ft 1

Note

Context of cost and distance required. Follow through their value of *b*

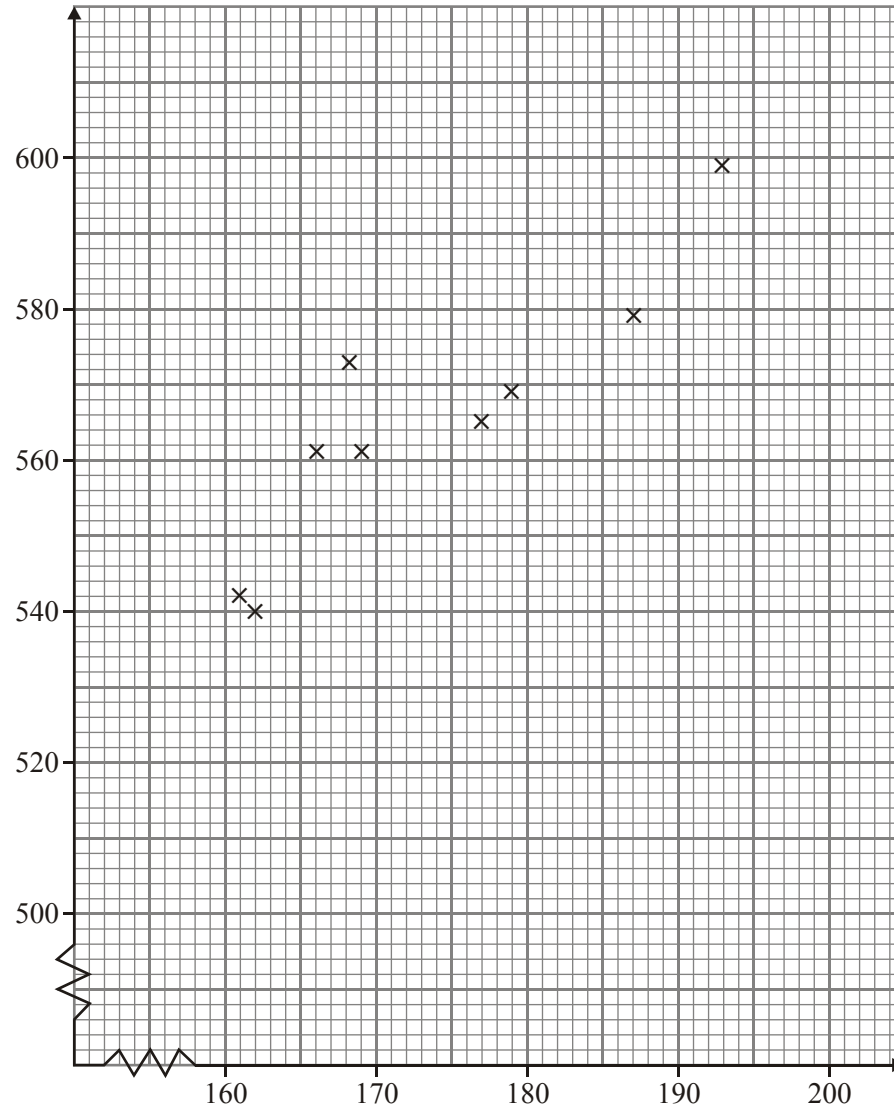
(d) $15.0 + 2.03d < 5d$ so $d > \frac{15.0}{(5 - 2.03)} = 5.00 \sim 5.05$ M1

So $t > 500 \sim 505$ A1 2

Note

M1 for an attempt to find the intersection of the 2 lines. Value of *t* in range 500 to 505 seen award M1.
 Value of *d* in range 5 to 5.05 award M1.
 Accept *t* greater than 500 to 505 inclusive to include graphical solution for M 1A1

5 (a)



Labels (not x, y)
Sensible scales allow axis interchange
Points

(-1 ee)

B1
B1
B2 4

(b) Taller people tend to be more confident
context

B1 1

(c) $h = 180 \Rightarrow c = 574.4$ or $574.5683\dots$
subt. of 180

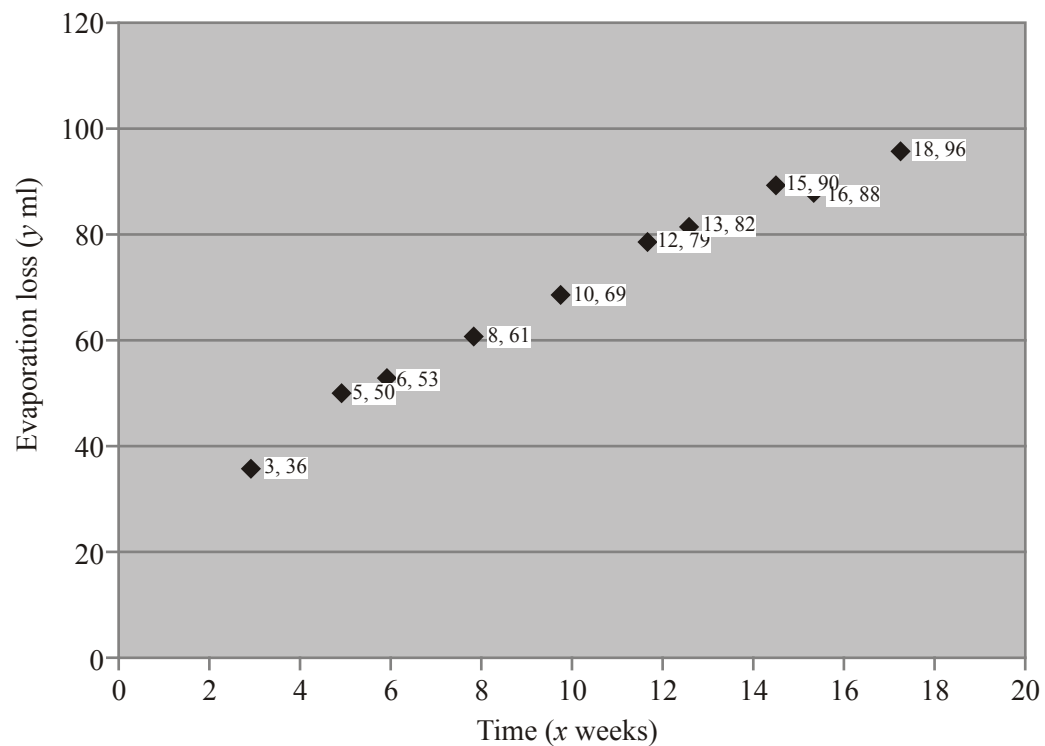
M1

574 – 575

A1 2

6 (a) Sensible graph scales, labels, shape

B1, B1, B1 3



(b) Points lie close to a straight line

B1 1

(c) For every extra week in storage, another 3.90 ml of chemical evaporates B1 1

(d) (i) 103.12

(ii) 165.52

B1 B1 2

Q	Scheme	Marks	AOs	Pearson Progression Step and Progress descriptor
7a	Continuous (quantitative) data	B1	1.2	1st Understand the difference between discrete and continuous data
		(1)		
7b	(Weak) negative correlation	B1	2.2b	2nd Know and understand the language of correlation and regression
		(1)		
7c	The amount of daily total sunshine if zero rain	B1	3.2a	4th Use the principles of bivariate data analysis in the context of the large data set
		(1)		
7d	Model predicts -0.457 hours of sunshine, a <i>negative</i> number of hours of sunshine... ... so not useful	M1 A1	3.4 3.2b	7th Comment on the appropriateness of binomial and other models in describing real-world situations
		(2)		
(5 marks)				