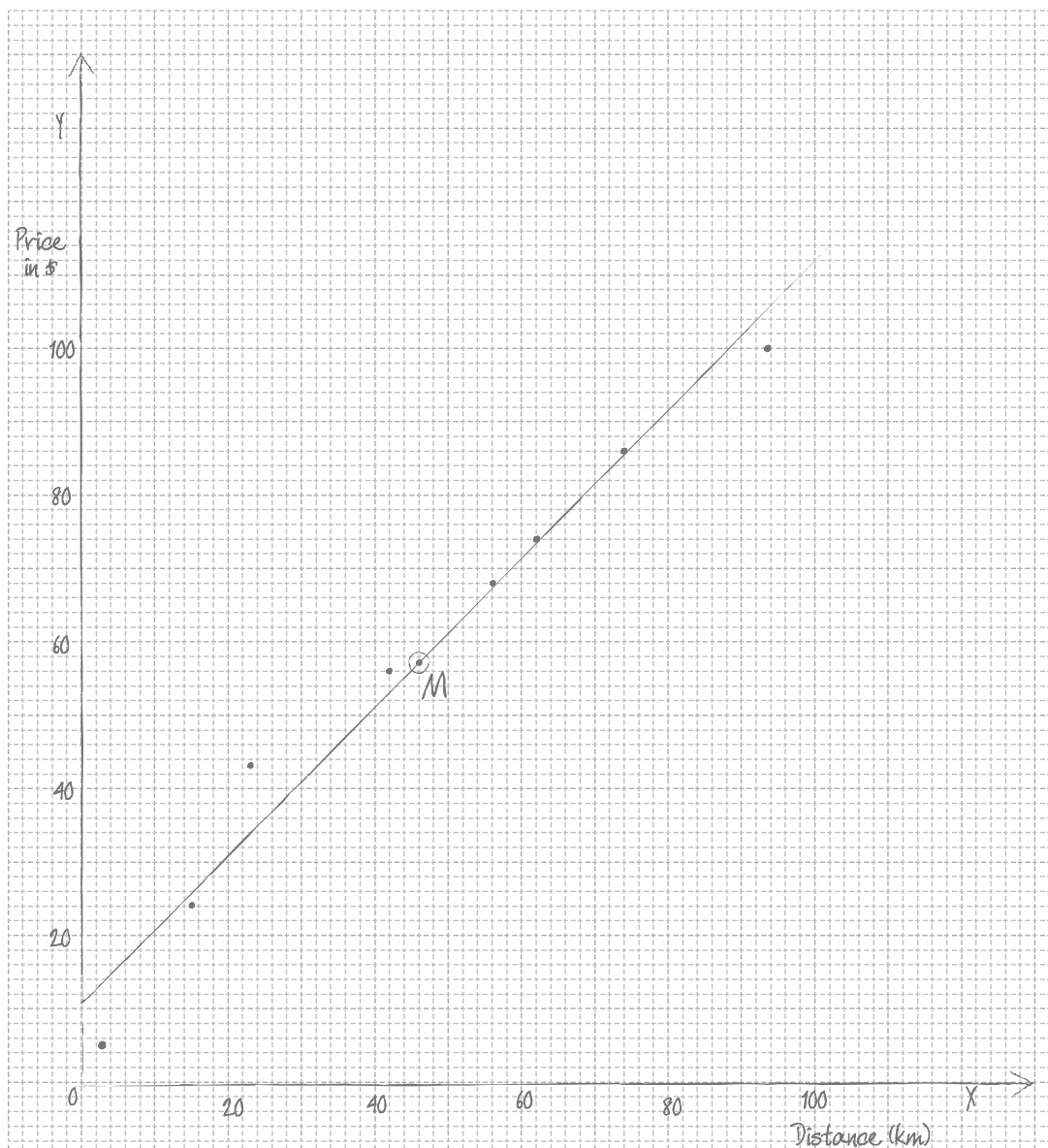


2.3 (a)



(A4) [4 marks]

Notes: Award (A1) for correct scale and labels (accept x and y).
Award (A3) for 7 or 8 points plotted correctly.
Award (A2) for 5 or 6 points plotted correctly.
Award (A1) for 3 or 4 points plotted correctly.
Award at most (A1)(A2) if points are joined up.
If axes are reversed, award at most (A0)(A3).
If graph paper is not used, award at most (A1)(A0).

(b) (i) $(\bar{x} =) 46$

(G1)

(ii) $(\bar{y} =) 57$

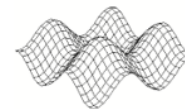
(G1) [2 marks]

(c) M(46, 57) plotted and labelled on the scatter diagram

(A1)(ft) [1 mark]

Notes: Follow through from their part (b).
Accept (\bar{x}, \bar{y}) as the label.

continued...



Question 2.3 continued

(d) (i) 0.986 (0.986322...) (G1)

(ii) $y = 1.01x + 10.3$ ($y = 1.01431...x + 10.3412...$) (G1)(G1)

Notes: Award (G1) for $1.01x$, (G1) for 10.3 .
Award (G1)(G0) if not written in the form of an equation.

OR

$(y - 57) = 1.01(x - 46)$ ($y - 57 = 1.01431...(x - 46)$) (G1)(G1)(ft) [3 marks]

Note: Award (G1) for 1.01 , (G1) for their 57 and 46 .

(e) straight line drawn on the scatter diagram (A1)(ft)(A1)(ft) [2 marks]

Notes: The line must be straight for either of the two marks to be awarded.

Award (A1)(ft) passing through their M plotted in (c).
Award (A1)(ft) for correct y-intercept (between 9 and 12).

Follow through from their y-intercept found in part (d).
If part (d) is used, award (A1)(ft) for their intercept (± 1).

(f) $y = 1.01431... \times 76 + 10.3412...$ (M1)

Note: Award (M1) for substitution of 76 into their regression line.

$= 87.4295...$ (A1)(ft)

Note: Follow through from part (d). If 3 sf values are used the value is 87.06 .

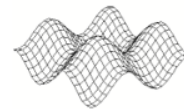
\$87 (A1)(ft)(G2) [3 marks]

Notes: The final (A1) is awarded for their answer given correct to the nearest dollar.
Method, followed by the answer of 87 earns (M1)(G2). It is not necessary to see the interim step.
Where the candidate uses their graph instead of the equation, and arrives at an answer other than 87 , award, at most, (G1)(ft).
If the candidate uses their graph and arrives at the required answer of 87 , award (G2)(ft).

continued...



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Question 2.3 continued

- (g) 76 is within the range of distances given in the data **OR** the correlation coefficient is close to 1.

(R1) [1 mark]

Notes: Award **(R1)** if **either** condition is given.

Sufficient to indicate that 76 is ‘within the data range’ and the correlation is ‘strong’.

Allow r^2 close to 1.

Do **not** accept “within the range of prices”.

- (h) Percentage error = $\frac{87-80}{80} \times 100$

(M1)

Note: Award **(M1)** for correct substitution into formula.

8.75%

(A1)(ft)(G2) [2 marks]

Notes: Follow through from their answer to part (f).

Accept either the rounded or unrounded answer to part (f).

If no integer value seen in part (f), follow through from their unrounded answer to part (f).

Answer must be positive.

Total: [18 marks]