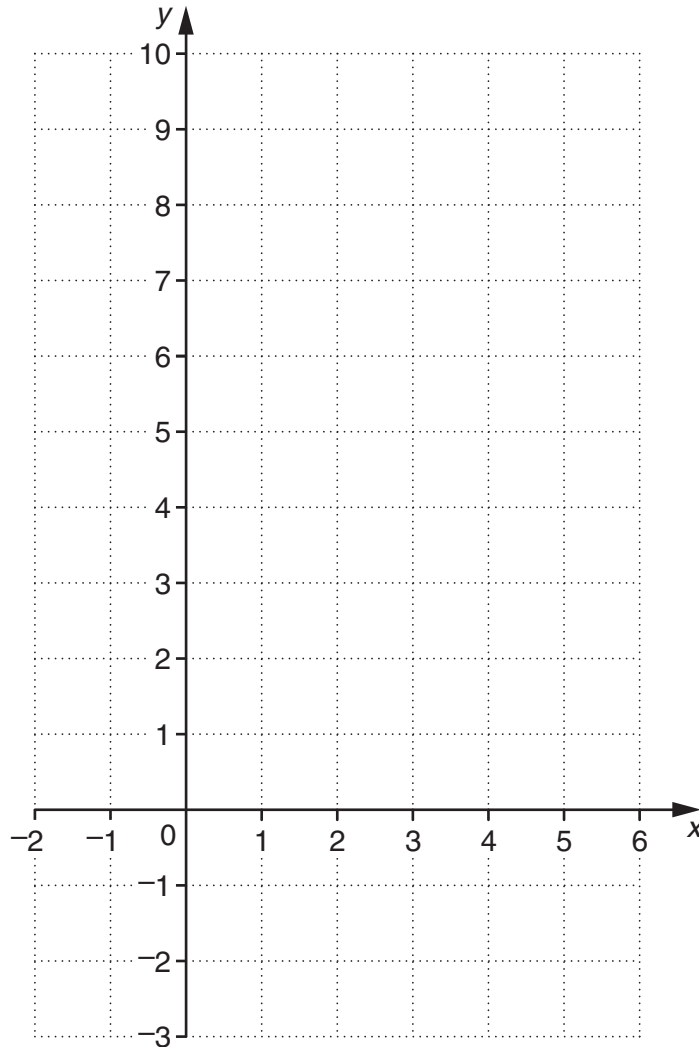


- 1 (a) Draw the graph of $y = 2x - 1$ for values of x from -1 to 5 .



[3]

- (b) Write down the gradient and y -intercept of the line $y = 5x + 3$.

(b) gradient _____

y -intercept _____ [2]

- (c) (i) Write down the **gradient** of a line **parallel** to $y = 5x + 3$.

(c)(i) _____ [1]

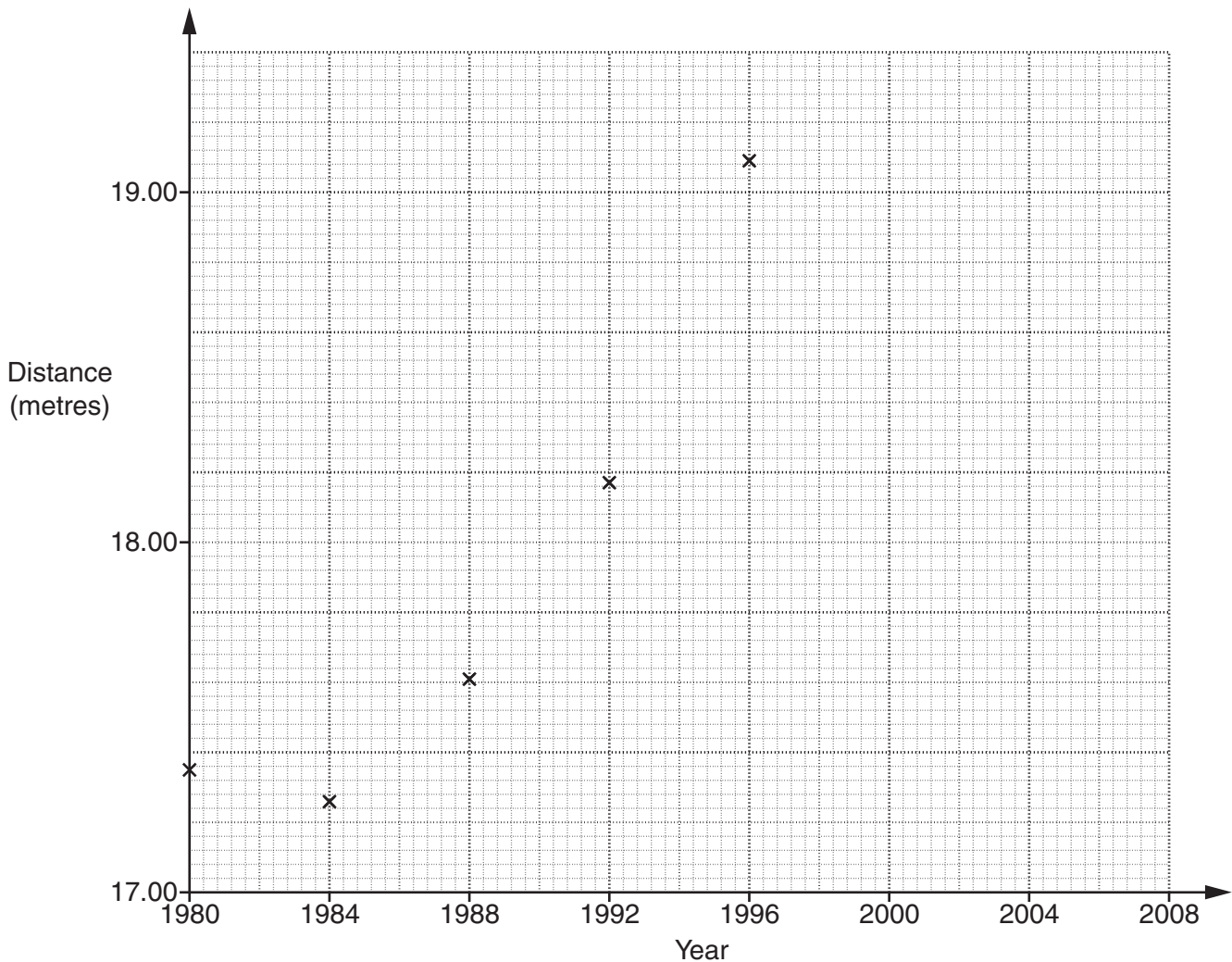
- (ii) Write down the **equation** of a line **perpendicular** to $y = 5x + 3$.

(ii) _____ [2]

- 2 The table shows the winning distances in the Olympic Men's Triple Jump competition since 1980.

Year	1980	1984	1988	1992	1996	2000	2004	2008
Distance (metres)	17.35	17.26	17.61	18.17	19.09	17.71	17.79	17.67

- (a) Complete the time-series graph to show these values.
The first five points have already been plotted.



[2]

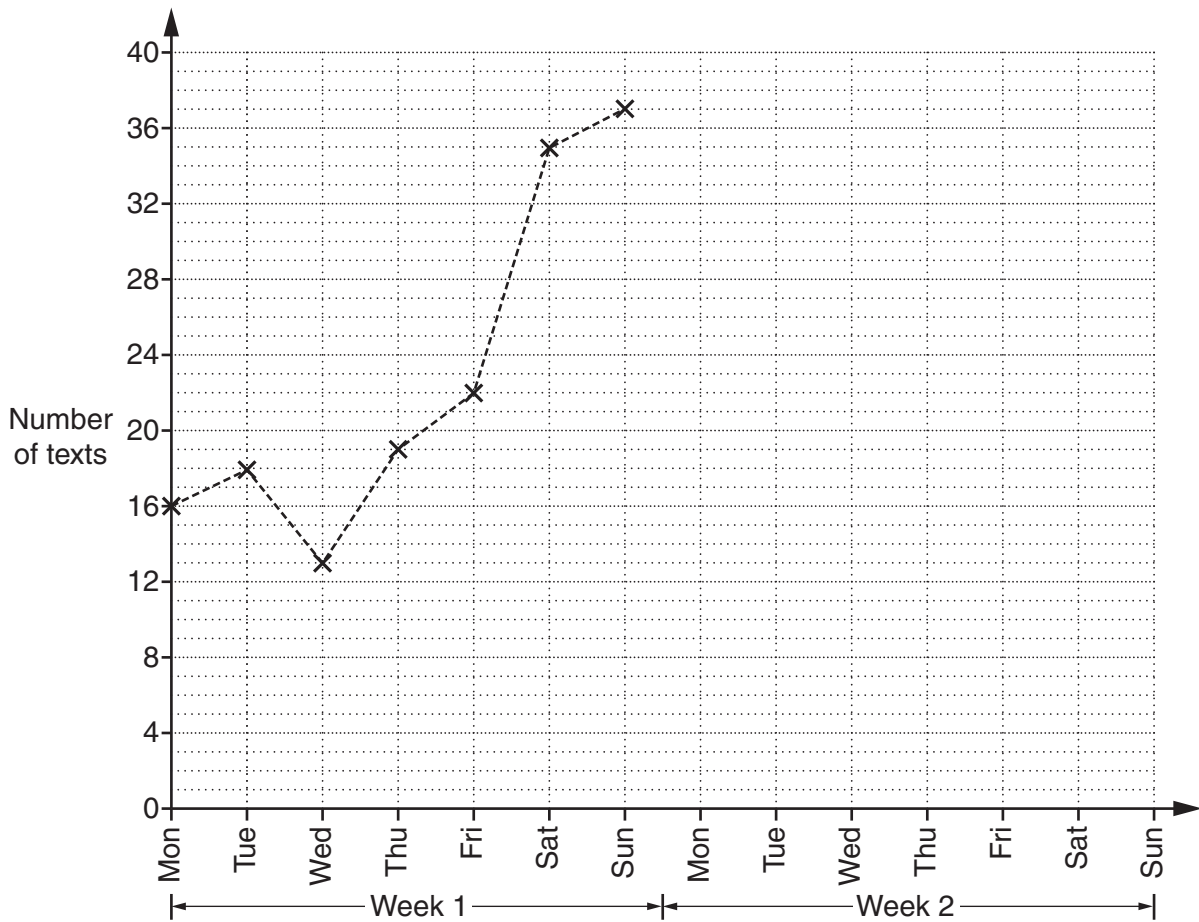
- (b) Jonathan thinks that the Men's Triple Jump gold medal winner in the 2012 Olympics will jump more than 20 metres.

Does the graph support Jonathan's view?
Explain your answer.

[1]

3 Jagoda keeps a record of how many text messages she receives each day over a 2-week period.

	Day	Number of texts		Day	Number of texts
Week 1	Monday	16	Week 2	Monday	19
	Tuesday	18		Tuesday	25
	Wednesday	13		Wednesday	21
	Thursday	19		Thursday	11
	Friday	22		Friday	23
	Saturday	35		Saturday	31
	Sunday	37		Sunday	



(a) Complete the time series graph up to and including Saturday of Week 2. The data for Week 1 has already been plotted.

[2]

(b) Jagoda received 20% more texts in total in Week 2 than in Week 1.

How many texts did she receive on Sunday of Week 2?

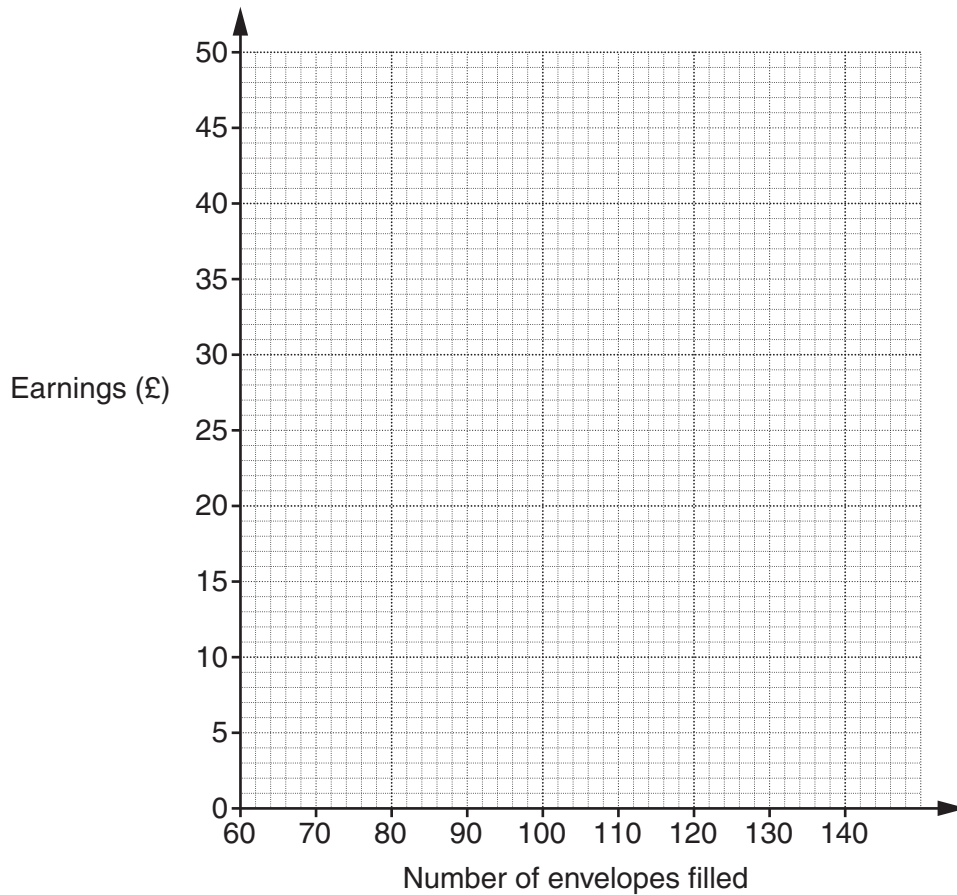
(b) _____ [4]

- 4 (a) Lizzie has a part-time job putting leaflets into envelopes. She earns £30 a day for filling **up to** 90 envelopes. She earns 20p for every **extra** envelope she fills after 90.

(i) Complete this table showing how much she can earn.

Number of envelopes filled	60	70	80	90	100	110	120	130	140
Earnings (£)		30		30				38	

[2]



- (ii) Plot the pairs of values on the grid and join them using straight lines.

[2]

(b) Alec also has a job filling envelopes.
He earns 30p for **every** envelope he fills.

(i) On the grid draw the straight line graph to show Alec's earnings for filling from 60 to 140 envelopes.

Label this line A.

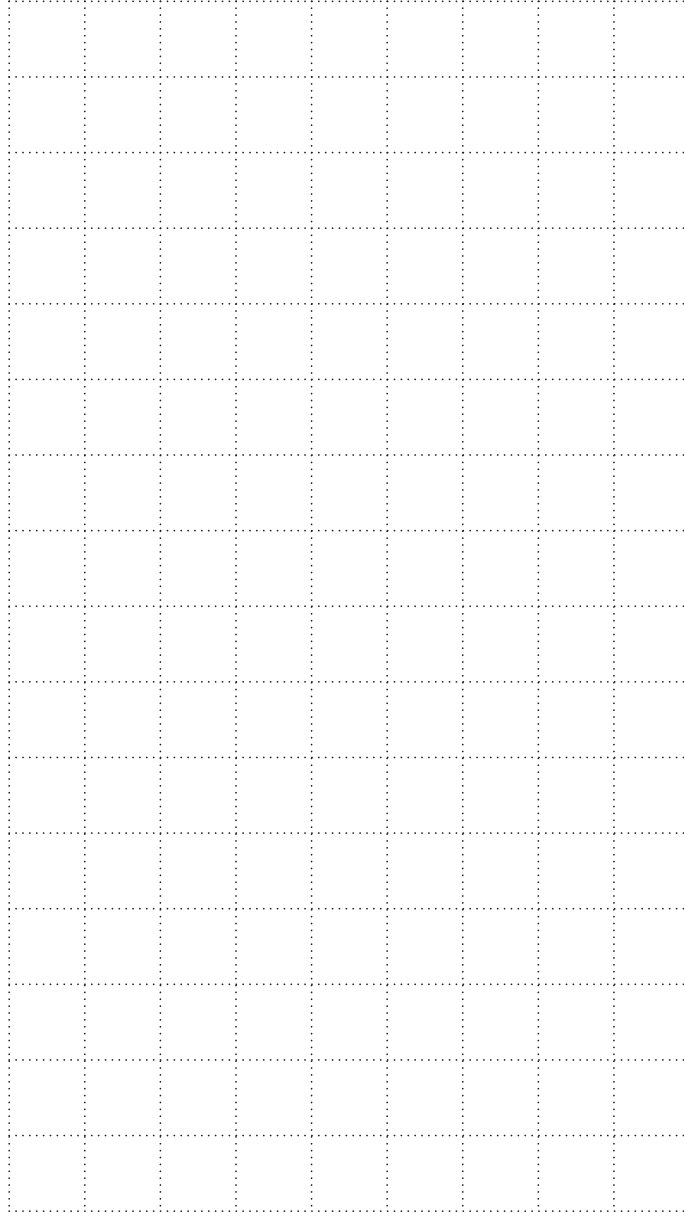
[2]

(ii) One day Alec and Lizzie find they have both earned the same amount of money and filled the same number of envelopes.

How many envelopes did they each fill?

(b)(ii) _____ [1]

- 5 (a) On the grid below, draw the graph of $y = 8 - 2x$ for $-1 \leq x \leq 6$.



[3]

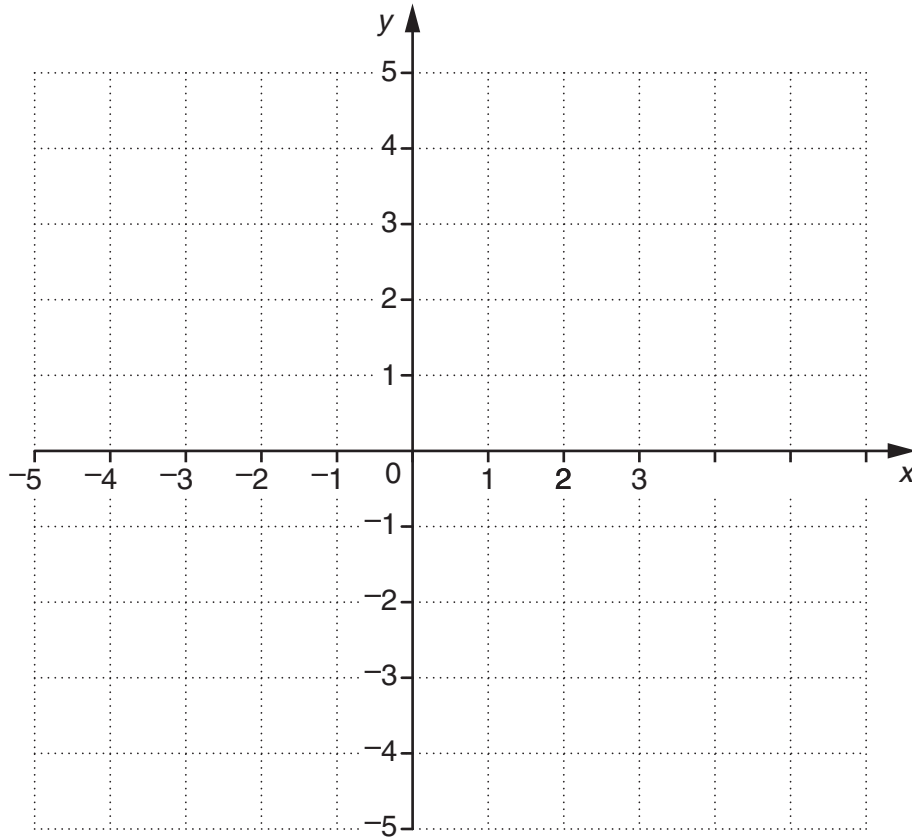
(b) Find the gradient of the line $y = 8 - 2x$.

(b) [2]

(c) Write down the equation of a line **perpendicular** to the line $y = 8 - 2x$.

(c) [2]

- 6 (a) On the grid, draw the line $3x + 4y = 12$.



[2]

- (b) On the grid, indicate clearly the region R which satisfies all the following inequalities.

$$\begin{aligned}3x + 4y &< 12 \\ x &> 1 \\ y &> 0\end{aligned}$$

[2]

- (c) Write down the integer values of x and y that satisfy all three inequalities.

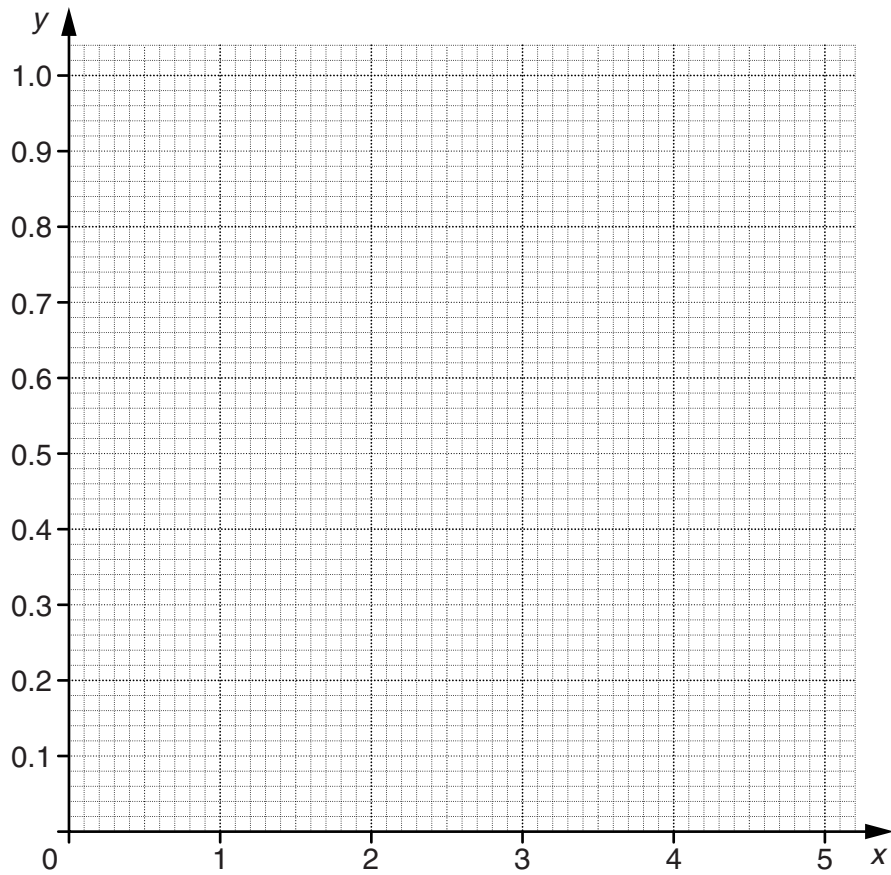
(c) $x =$ _____ $y =$ _____ [1]

7 (a) Complete the table of values for $y = 0.5^x$.

x	0	1	2	3	4	5
y		0.5			0.0625	0.03125

[2]

(b) Draw the graph of $y = 0.5^x$ for $0 \leq x \leq 5$.



[2]

(c) Use your graph to solve this equation.

$$0.5^x = 0.4$$

(c) [1]

- 8 Harpreet is doing an experiment.
She attaches different weights to the end of a spring
and then measures the length of the spring.

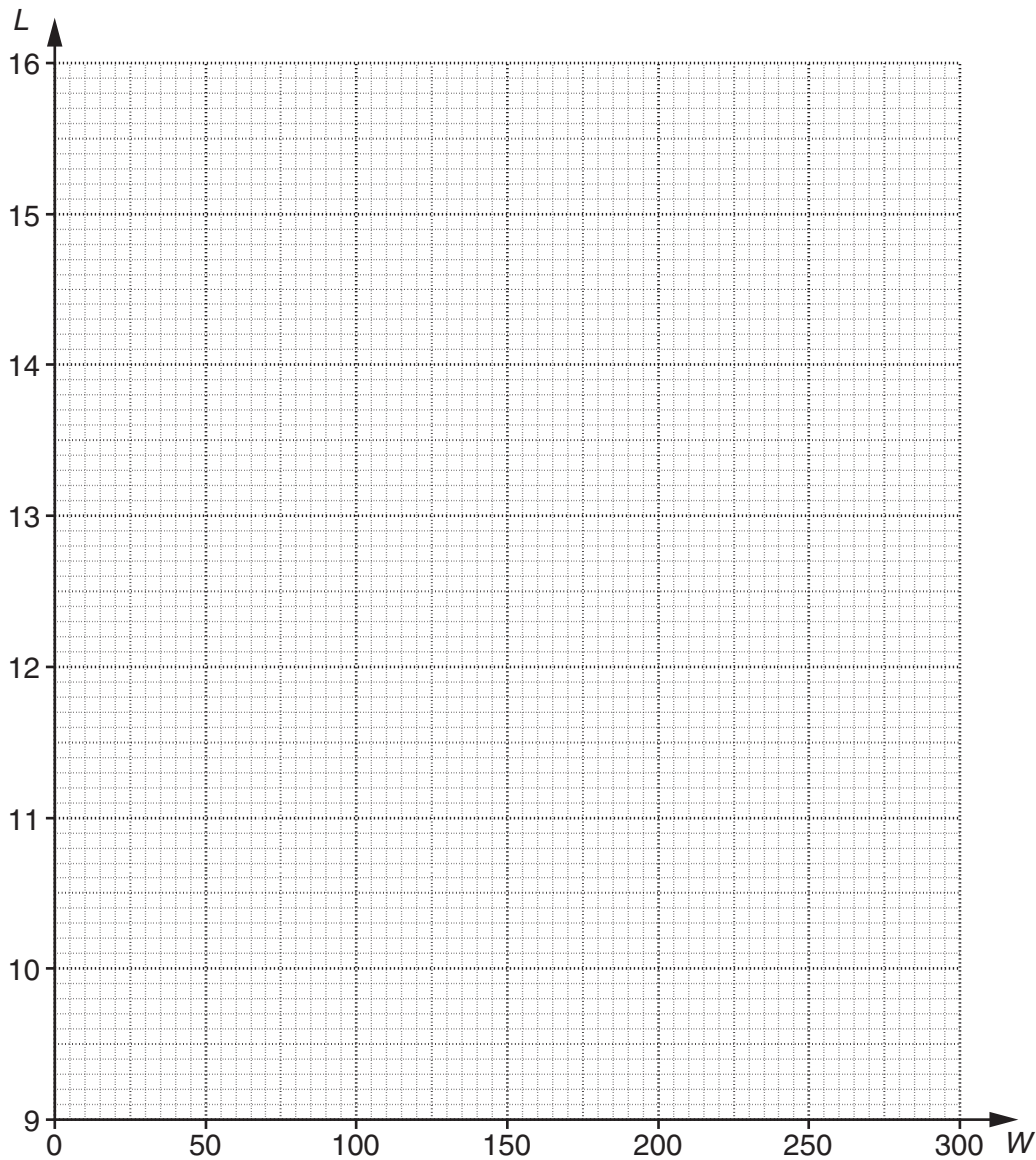


She records the length, L cm, of the spring for each weight, W g.

Her results are given in the table.

W	50	80	120	200	260
L	11	11.6	12.4	14	15.2

- (a) Use these values to draw the straight line graph of L against W .



[3]

(b) How long was the spring before Harpreet attached any weight to it?

(b) _____ cm [1]

(c) Calculate the gradient of the graph in part (a).

(c) _____ [2]

(d) Write down the equation of your graph in the form $L = mW + c$.

(d) _____ [1]

(e) Harpreet says that she can use the equation in part (d) to calculate the length of the spring if she attaches a 5 kg weight to it.

Explain why she may be wrong.

_____ [1]