

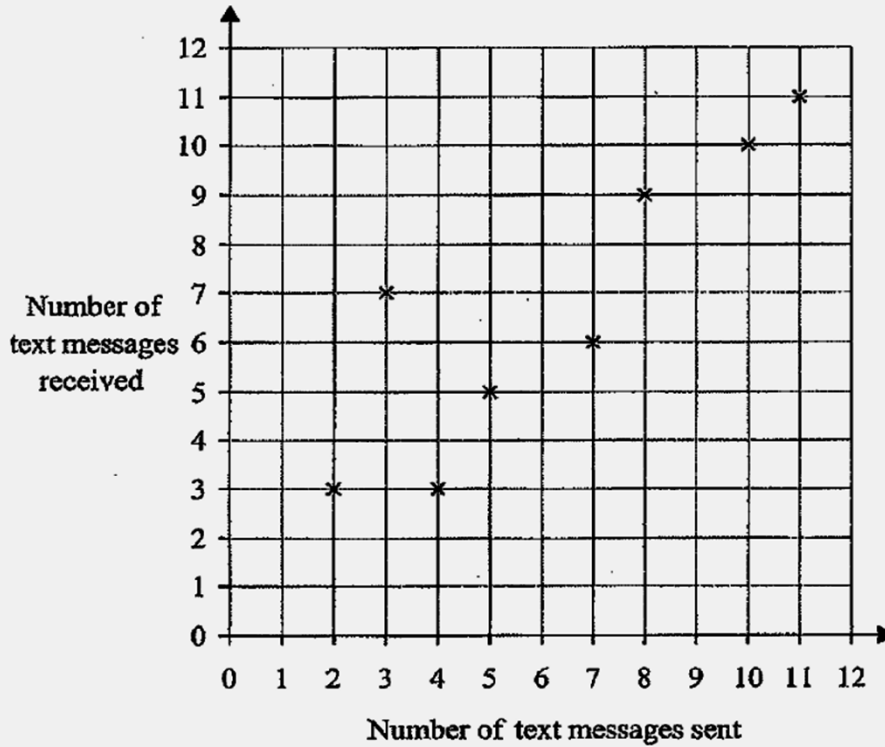
GCSE Statistics - Diagnostic test

Scatter diagrams and Time series

NAME: _____

1

Whitney records the number of text messages she sent and the number of text messages she received on each of eight Saturdays. The scatter diagram shows her results.



- (a) Write down the number of text messages she received on the day she sent 4 text messages.

.....
(1)

- (b) Work out the total number of text messages she sent on all eight Saturdays.

.....
(1)

- (c) Describe the correlation between the number of text messages sent and the number of text messages received.

.....
(1)

- (d) On the scatter diagram, draw a line of best fit.

(1)

On the ninth Saturday Whitney sent 6 text messages.

- (e) Estimate the number of text messages she received on this Saturday.

.....
(1)

(Total 5 marks)

A gift shop sells wrapping paper.

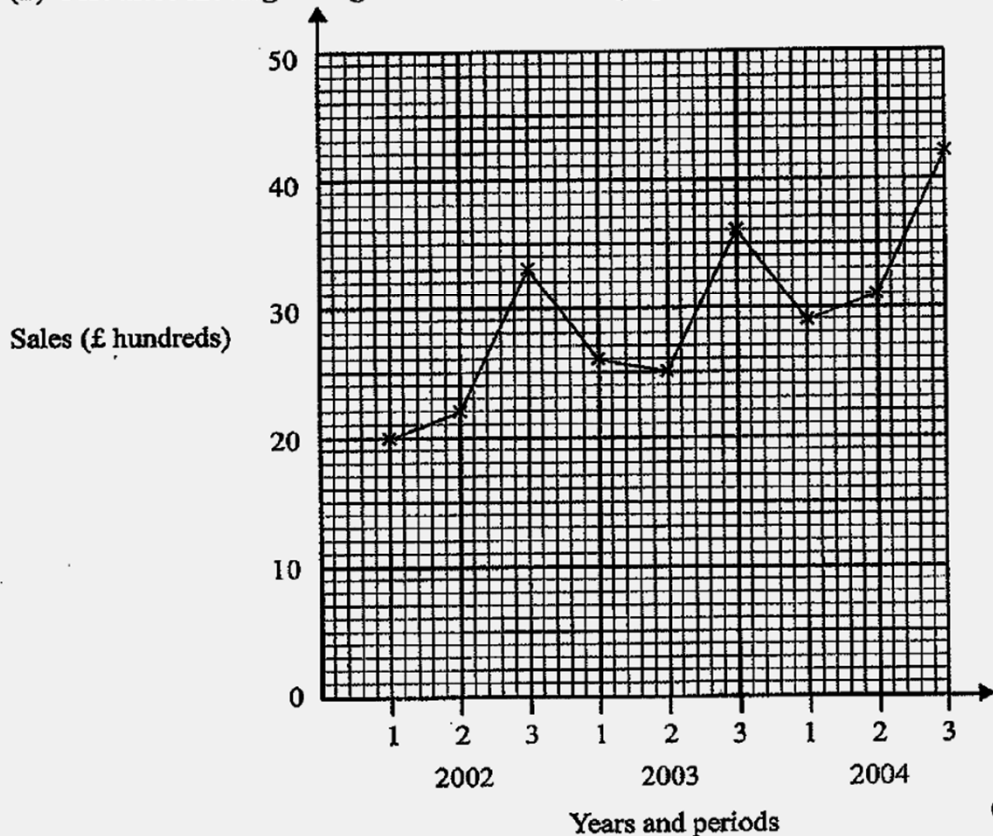
The table gives information about the sales of wrapping paper, in £s, for successive four-month periods from the start of 2002 to the end of 2004.

The first 4 three-point moving averages have been worked out.

Year	Period		Sales (£ hundreds)	Three-point moving average
2002	Jan – Apr	1	20	
	May – Aug	2	22	$(20 + 22 + 33) \div 3 = 25$
	Sep – Dec	3	33	$(22 + 33 + 26) \div 3 = 27$
2003	Jan – Apr	1	26	$(33 + 26 + 25) \div 3 = 28$
	May – Aug	2	25	$(26 + 25 + 36) \div 3 = 29$
	Sep – Dec	3	36	
2004	Jan – Apr	1	29	
	May – Aug	2	31	
	Sep – Dec	3	42	

(a) (i) Complete the table to show the other three-point moving averages.

(ii) Plot these moving averages on the time series graph.



(b) What do the moving averages show about the trend of the sales of wrapping paper in the gift shop?

.....
.....

(1)

The time series graph shows there are seasonal variations in the sales of wrapping paper in the gift shop.

(c) (i) In which period are there more sales than the general trend?

.....

(ii) Suggest a reason for this.

.....
.....

(2)

Total _____ out of 12