

A

2007 P1 non-calculator

6. (a) Show that the standard deviation of 1, 1, 1, 2 and 5 is equal to $\sqrt{3}$. 3
- (b) Write down the standard deviation of 101, 101, 101, 102 and 105. 1

B

2003 P2 calculator

5. A gardener grows tomatoes in his greenhouse. The temperature of the greenhouse, in degrees Celsius, is recorded every day at noon for one week.

17 22 25 16 21 16 16

- (a) For the given temperatures, calculate:
- (i) the mean; 1
- (ii) the standard deviation. 3
- Show clearly all your working.**

For best growth, the mean temperature should be $(20 \pm 5)^{\circ}\text{C}$ and the standard deviation should be less than 5°C .

- (b) Are the conditions in the greenhouse likely to result in best growth? 2
- Explain clearly your answer.**

C

2006 P2 calculator

5. A new central heating system is installed in a house. Sample temperatures, in degrees Celsius, are recorded below.

19 21 23 21 19 20

- (a) For this sample data, calculate:
- (i) the mean; 1
- (ii) the standard deviation. 3
- Show clearly all your working.**

The target temperature for this house is 20°Celsius . The system is judged to be operating effectively if the mean temperature is within $0.6^{\circ}\text{Celsius}$ of the target temperature and the standard deviation is less than 2°Celsius .

- (b) Is the system operating effectively? 2
- Give reasons for your answer.**

Statistics Int 2 PP 2001 -2008

2007 P2 calculator

6. Tasnim rolls a standard dice with faces numbered 1 to 6.
The probability that she gets a number less than 7 is

- A 0
B $\frac{1}{7}$
C $\frac{1}{6}$
D 1.

Write down the letter that corresponds to the correct probability.

1

2004 P2 calculator

2. The heights, in millimetres, of six seedlings are given below.

15 18 14 17 16 19

(a) Calculate:

- (i) the mean;
(ii) the standard deviation;
of these heights.

1
3

Show clearly all your working.

(b) Later the same six seedlings are measured again.

Each has grown by 4 millimetres.

State:

- (i) the mean;
(ii) the standard deviation;
of the new heights.

1
1

2005 P2 calculator

2. In a bakery, a sample of six fruit loaves is selected and the weights, in grams, are recorded.

395 400 408 390 405 402

For the above data the mean is found to be 400 grams.

(a) Calculate the standard deviation.

Show clearly all your working.

3

(b) New methods are introduced to ensure more consistent weights.

Another sample is then taken and the mean and standard deviation found to be 400 grams and 5.8 grams respectively.

Are the new methods successful?

Give a reason for your answer.

1

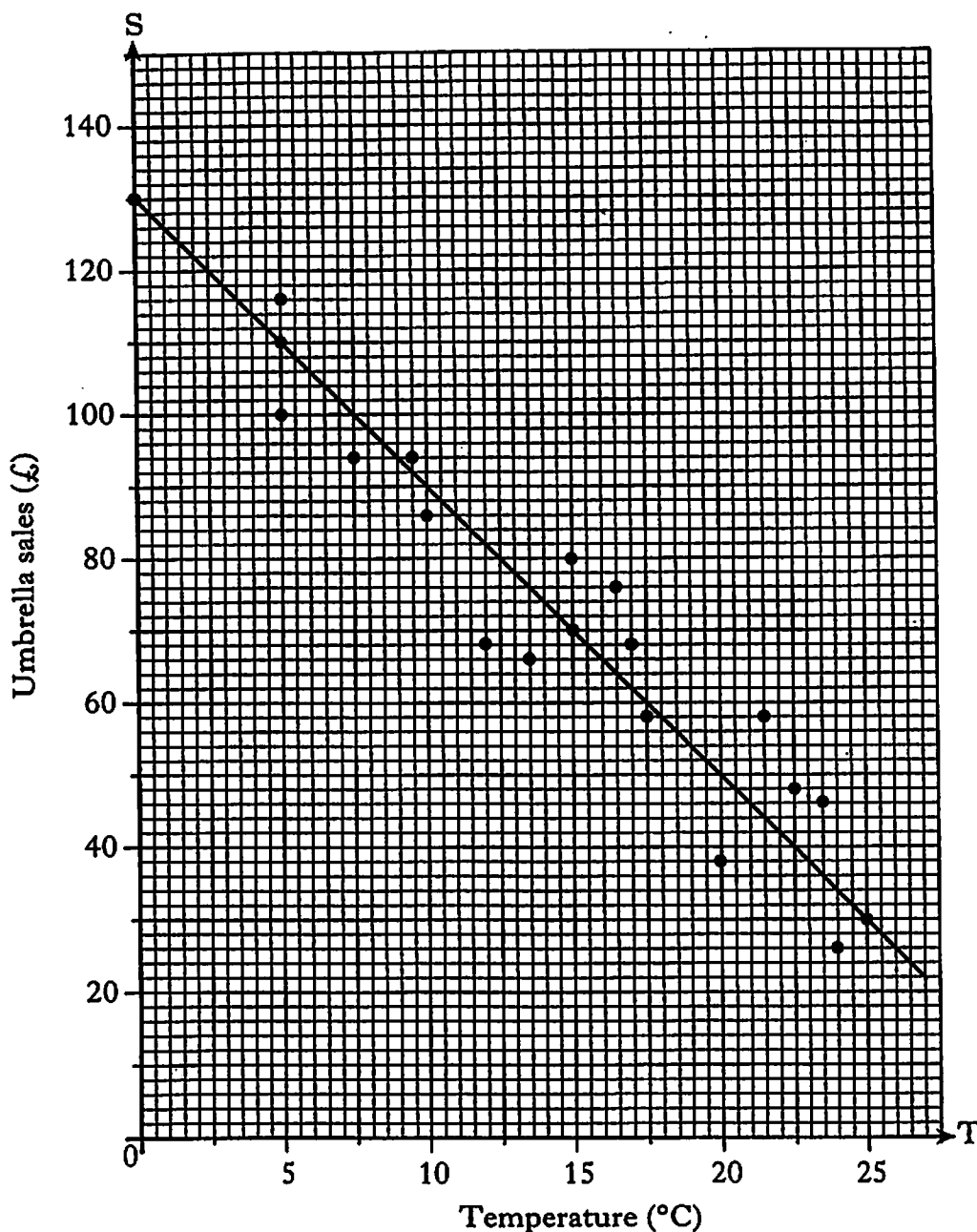
Line of best fit

2006 P1 non-calculator

G

1. The temperature, in degrees Celsius, at mid-day in a seaside town and the sales, in pounds, of umbrellas are shown in the scattergraph below.

A line of best fit has been drawn.



- (a) Find the equation of the line of best fit.

3

- (b) Use your answer to part (a) to predict the sales for a day when the temperature is 30 degrees Celsius.

1

Line of best fit

2008 P2 calculator

3. The results for a group of students who sat tests in mathematics and physics are shown below.

Mathematics (%)	10	18	26	32	49
Physics (%)	25	35	30	40	41

- (a) Calculate the standard deviation for the mathematics test.

4

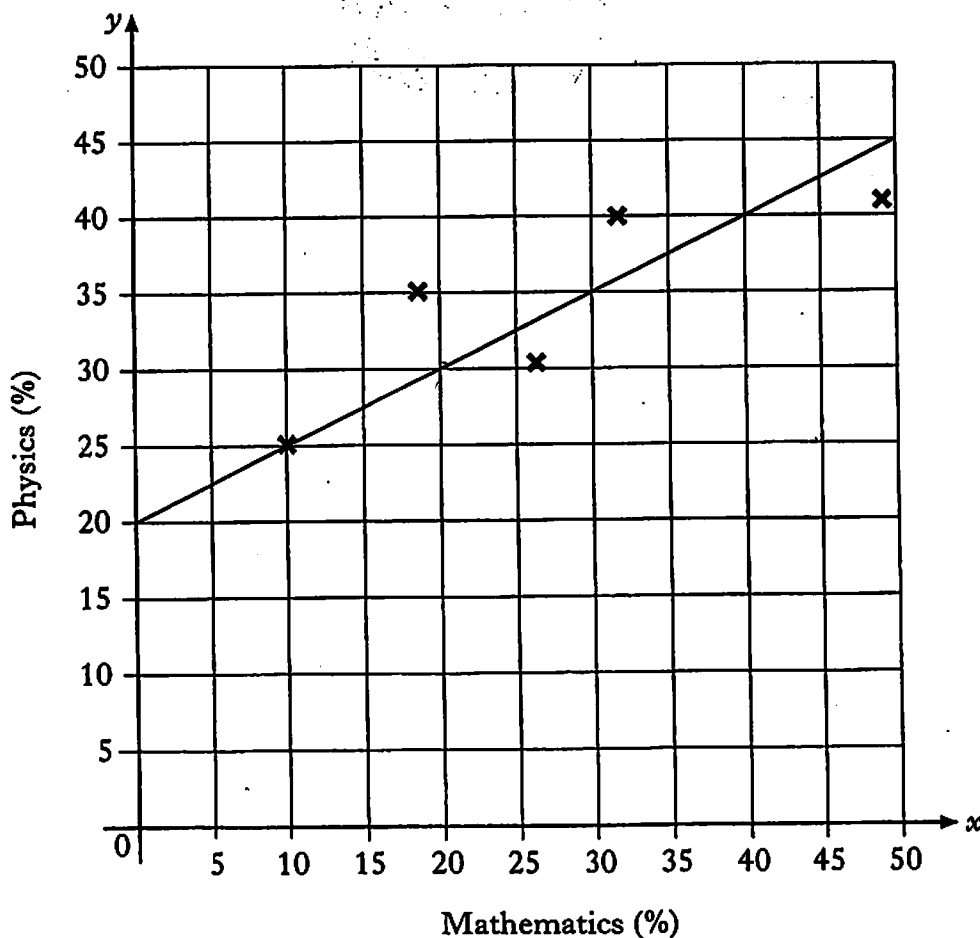
- (b) The standard deviation for physics was 6.8.

Make an appropriate comment on the distribution of marks in the two tests.

1

These marks are shown on the scattergraph below.

A line of best fit has been drawn.



- (c) Find the equation of the line of best-fit.

3

- (d) Another pupil scored 76% in the mathematics test but was absent from the physics test.

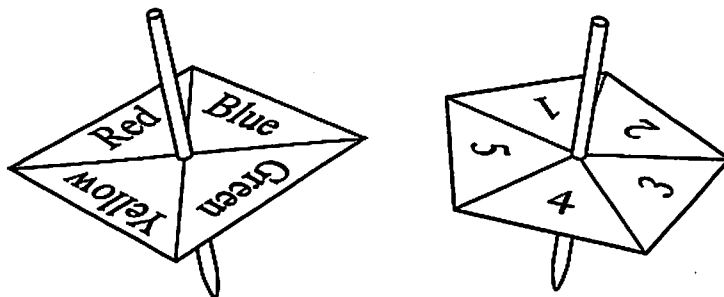
Use your answer to part (c) to predict his physics mark.

1

2003 P1 non-calculator

2. Two spinners are used in an experiment.

I



The table below shows some of the possible outcomes when both spinners are spun and allowed to come to rest.

	1	2	3	4	5
Red	R,1	R,2			
Yellow	Y,1				
Blue	B,1				
Green	G,1				

(a) Copy and complete the table.

1

(b) What is the probability that one spinner comes to rest on red and the other on an even number?

1

2007 P1 non-calculator

J

1. The table below shows the results of a survey of First Year pupils.

	<i>Wearing a blazer</i>	<i>Not wearing a blazer</i>
<i>Boys</i>	40	22
<i>Girls</i>	29	9

What is the probability that a pupil, chosen at random from this sample, will be a girl wearing a blazer?

1