

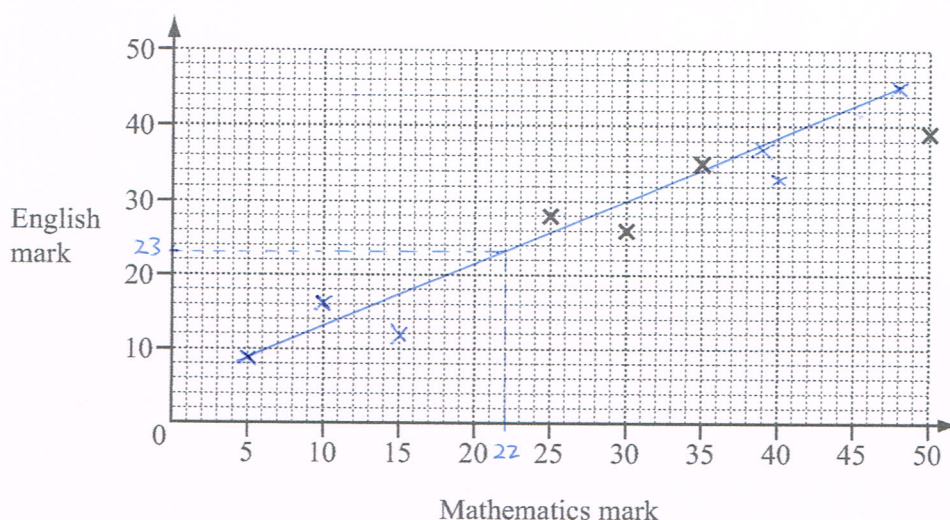
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Mathematics mark	30	50	35	25	5	39	48	40	10	15
English mark	26	39	35	28	9	37	45	33	16	12

For
Examiner's
Use

The table shows the test marks in Mathematics and English for 10 students.

- (a) (i) On the grid, complete the scatter diagram to show the Mathematics and English marks for the 10 students. The first four points have been plotted for you.



- (ii) What type of correlation does your scatter diagram show? [2]

Answer(a)(ii) Positive [1]

- (iii) Draw a line of best fit on the grid. [1]

- (iv) Ann missed the English test but scored 22 marks in the Mathematics test. Use your line of best fit to estimate a possible English mark for Ann.

Answer(a)(iv) 23 [1]

- (b) Show that the mean English mark for the 10 students is 28.

$$\begin{aligned} \text{Answer(b)} \quad \bar{x} &= \frac{26+39+35+28+9+37+45+33+16+12}{10} \\ &= \frac{280}{10} = 28 \end{aligned}$$

[2]

- (c) Two new students do the English test. They both score the **same** mark. The mean English mark for the 12 students is 31. Calculate the English mark for the new students.

$$\begin{aligned} \frac{12 \times 31 - 28 \times 10}{2} &= \frac{372 - 280}{2} \\ &= \frac{92}{2} = 46 \end{aligned}$$

Answer(c) 46 [3]