

Cambridge IGCSE Maths 0580 Transformations, Vectors, Probability and Statistics Practice Exam

Cambridge IGCSE Mathematics (0580), Core and Extended · 25 questions · 50 marks

Name _____

Date _____

Score / 50

- Answer every question. Show your working: most marks are for method.
- Section A no calculator; Section B calculator allowed.
- Topics: Classifying statistical data; Interpreting statistical data; Scatter diagrams; Transformations; Introduction to probability; Relative and expected frequencies; Probability of combined events; Averages and measures of spread; Statistical charts and diagrams.
- The mark scheme is a separate free PDF: [igcsemathrevision.com/igcse-frontend/downloads/practice-exams/0580/cambridge-igcse-maths-0580-transformations-vectors-probability-and-statistics-practice-exam-mark-scheme.pdf](https://www.igcsemathrevision.com/igcse-frontend/downloads/practice-exams/0580/cambridge-igcse-maths-0580-transformations-vectors-probability-and-statistics-practice-exam-mark-scheme.pdf)

Section A: no calculator

1. Give one example of categorical data that could be collected about a car. [1]
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2. Kai asks 10 people at a gym whether they exercise every day. 9 of them say yes. Kai says, "90% of the people in my town exercise every day." Give one reason why Kai's conclusion may not be correct. [1]
|
3. A scatter diagram shows that as the outside temperature increases, the number of hot drinks sold at a café decreases. What type of correlation does this show? [1]
|
4. Write down the image of each point after the translation. [2]
(a) $(3, 2)$ translated by $\begin{pmatrix} 4 \\ -5 \end{pmatrix}$ (b) $(-1, 6)$ translated by $\begin{pmatrix} -2 \\ 3 \end{pmatrix}$
|
5. A bag contains 3 red, 5 blue and 2 green counters. One counter is taken at random. Find [2]
(a) P(blue) (b) P(not green)
|



6. Ella throws a coin 50 times and gets 22 heads. [2]
(a) Find the relative frequency of heads.
(b) How many heads would you expect in 300 throws of a fair coin?
7. Two fair coins are thrown. [2]
(a) List all the possible outcomes.
(b) Find the probability of two heads.
8. Find the mean of 12, 15, 9, 14. [2]
9. The times taken to solve a puzzle are recorded to the nearest second. Explain why time is continuous data, even though the recorded values are whole numbers. [1]
10. The data on a scatter diagram have x -values from 5 to 30 and show strong positive correlation. Mo uses the line of best fit to estimate y when $x = 50$. Explain why his estimate may not be reliable. [1]
11. A triangle has vertices (1, 1), (2, 1) and (1, 3). It is enlarged with scale factor 3, centre the origin. Write down the vertices of the image. [2]
12. A spinner can land on red, blue, green or yellow. $P(\text{red}) = 0.2$, $P(\text{blue}) = 0.35$ and $P(\text{yellow}) = 0.15$. Find $P(\text{green})$. [2]
13. A biased dice is thrown 200 times. The relative frequency of a six is 0.3. [2]
(a) How many sixes were thrown?
(b) How many sixes would you expect in 50 more throws?



14. The table shows the number of goals scored by a team in 20 matches. [2]

Goals	0	1	2	3
Frequency	4	6	7	3

Find (a) the mode (b) the median.

15. In a pictogram, one symbol represents 12 books. May is shown by $3\frac{1}{4}$ symbols and June by $1\frac{3}{4}$ symbols. How many more books were borrowed in May than in June? [2]

16. The probability that Tom is late on Monday is 0.4. The probability that he is late on Tuesday is 0.3. The two events are independent. Use a tree diagram to find the probability that he is (a) late on both days (b) late on neither day. [3]

17. The table shows the activities chosen by some students. [3]

	Swimming	Tennis	Football	Dance
Boys	8	6	11	2
Girls	12	5	4	9

- (a) Which activity was the most popular overall?
(b) What fraction of the girls chose swimming? Give your answer in its simplest form.

18. Priya draws a line of best fit on a scatter diagram. She makes her line pass through the origin, and all the points are above her line. Give two reasons why her line is not a good line of best fit. [2]

19. A survey asks each student six questions. Is the data from each question categorical, discrete or continuous? [3]

(a) the number of people in your home (b) the distance from your home to school (c) how you travel to school (d) your shoe size (e) the time you spend on homework each night (f) your favourite subject



- 20.** The monthly pay, in dollars, of the five workers in a small company is: [3]
1200, 1250, 1300, 1280, 6000
(a) Find the mean and the median.
(b) The manager says that the average pay is more than \$2000. Explain why the median is a better average to use here.
- 21.** A pie chart shows how 240 people voted for three candidates, A, B and C. The angle for A is 105° and [3]
the angle for B is 150° . How many people voted for C?

Section B: calculator allowed

- 22.** The letters of the word MATHEMATICS are written on 11 cards. One card is taken at random. Find [2]
(a) $P(M)$ (b) $P(\text{a vowel})$
- 23.** In a survey of 80 cars passing a school, 20 were red. [2]
(a) Estimate the probability that the next car is red.
(b) Estimate how many of the next 500 cars will be red.
- 24.** There are 30 students in a class. 12 like only cats, 8 like only dogs and 5 like both. The rest like [2]
neither. A student is chosen at random. Use a Venn diagram to find the probability that the student likes dogs.
- 25.** The mean of six numbers is 8. Five of the numbers are 5, 9, 11, 6, 7. Find the sixth number. [2]

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