

IGCSE 數學 0580 Paper 3

IGCSE (Core) 數學 | 時限：120 分鐘 | 總分：104 分 | 共 51 題

甲部：數字 (26 分)

全部作答，可使用計算機。

1. Work out 3.6×2.5 .
2. A concert ticket costs \$480. The price then increases by 15%. Work out the new price.
3. A car travels 156 km in 2.4 hours. Work out its average speed in km/h.
4. Convert 4 500 mm to metres.
5. Write 0.625 as a fraction in its simplest form.
6. Find 35% of 260.
7. Share \$560 in the ratio 3 : 4 : 7.
8. Work out $2.7^2 - 1.44$.
9. Write 3.6472 correct to 3 significant figures.
10. In a sale a bag costing \$240 is reduced by 20%. Work out the sale price.
11. Write 0.00042 in standard form.
12. Find the lowest common multiple (LCM) of 24 and 36.
13. Work out $\frac{3}{4} \times \frac{2}{9}$. Give your answer in its simplest form.
14. A recipe for 6 people needs 450 g of flour. Work out the amount of flour needed for 15 people.
15. \$2 000 is invested at 4.5% simple interest per year. Work out the interest after 3 years.
16. A map has a scale of 1 : 50 000. A road is 7.2 cm long on the map. Work out the real length of the road in kilometres.

乙部：代數 (26 分)

化簡及解方程，須列出步驟。

17. Simplify $7x - 3y + 2x + 5y$.
18. Expand $4(3x - 2)$.
19. Factorise $6x + 9y$.

20. Solve $5x - 8 = 42$.
21. Solve $3(x + 4) = 2x + 19$.
22. The first four terms of a sequence are 5, 8, 11, 14. (a) Find the 20th term. (b) Write down an expression for the n th term.
23. $v = u + at$. Work out v when $u = 12$, $a = 3.5$ and $t = 8$.
24. Make t the subject of the formula $s = (u + v)t / 2$.
25. Work out the value of y when $x = -2$, given $y = 3x^2 - 2x$.
26. Solve $x^2 = 49$.
27. Expand and simplify $(x + 5)(x - 3)$.
28. Solve the inequality $4x + 3 \leq 27$.

丙部：圖形與空間（30 分）

圖形未必按比例綑畫。

29. Work out the sum of the interior angles of a hexagon.
30. Work out the size of each exterior angle of a regular octagon.
31. A circle has radius 7.5 cm. Work out its area. Use $\pi = 3.142$.
32. A cylinder has radius 4 cm and height 10 cm. Work out its volume. Use $\pi = 3.142$.
33. A prism has a constant cross-section of area 12 cm^2 and a length of 15 cm. Work out its volume.
34. A shape is enlarged by scale factor 2.5. Work out the area scale factor.
35. Two triangles are similar. The smaller triangle has area 20 cm^2 and the smaller of two corresponding sides is 6 cm. The larger corresponding side is 9 cm. Work out the area of the larger triangle.
36. A right-angled triangle has two shorter sides of length 9 cm and 12 cm. Work out the length of the hypotenuse.
37. In a right-angled triangle the hypotenuse is 13 cm and the side opposite angle θ is 5 cm. Work out the size of angle θ , correct to 1 decimal place.
38. A ship sails on a bearing of 065° . It then turns 130° clockwise. Write down its new bearing.
39. A trapezium has parallel sides of length 8 cm and 14 cm and a height of 6 cm. Work out its area.
40. A sector of a circle has radius 9 cm and angle 140° . Work out the length of its arc. Use $\pi = 3.142$.
41. A sphere has radius 3 cm. Work out its volume. Use $\pi = 3.142$.

丁部：數據與概率 (22 分)

概率以最簡分數作答。

42. The number of goals scored in five matches were 14, 18, 9, 21 and 13. Work out the mean.
43. Here are seven test scores: 4, 6, 6, 8, 11, 13, 15. Write down (a) the median, (b) the mode, (c) the range.
44. A bag contains 3 red, 5 green and 4 blue counters. One counter is taken at random. Work out the probability that it is not blue.
45. A fair dice is rolled once. Work out the probability of scoring more than 4.
46. In a pie chart 36 out of 90 students chose football. Work out the angle of that sector.
47. A spinner landed on 6 forty-six times in 200 spins. (a) Estimate the probability of landing on 6. (b) Work out how many times it is expected to land on 6 in 500 spins.
48. Two independent events have probabilities 0.4 and 0.5. Work out the probability that both events happen.
49. The mean of five numbers is 12. Four of the numbers are 9, 14, 11 and 13. Find the fifth number.
50. The probability that a train is late is 0.62. Work out the probability that it is not late.
51. The smallest value in a data set is 3.2 and the largest value is 9.8. Write down the range.