

Cambridge IGCSE Mathematics (0580) — Practice Question Set

Topics: Number · Algebra · Geometry & Mensuration · Statistics | Total Marks: 32 | Calculator allowed except where marked

Instructions: This is an original practice set created by CI Tutors in the Cambridge IGCSE question style — it does not reproduce any official Cambridge International past paper. Show all working clearly; method marks are awarded even if the final answer is incorrect.

Section 1 — Number & Algebra

- 1. Write 0.00456 in standard form. [2]
- 2. Solve the simultaneous equations: $2x + y = 11$, $x - y = 1$. [3]
- 3. (No calculator) Simplify: $(3x^3y^2) \times (2x^2y^4)$ [2]
- 4. Factorise completely: $6x^2 - 13x - 5$ [3]
- 5. \$5000 is invested at 4% per year compound interest. Calculate the value of the investment after 3 years, giving your answer to the nearest dollar. [2]

Section 2 — Geometry & Mensuration

- 6. A cylinder has radius 7 cm and height 15 cm. Calculate its volume. (Take $\pi = 22/7$) [3]
- 7. In triangle ABC, angle $A = 90^\circ$, $AB = 9$ cm and $AC = 12$ cm. Calculate the length of BC and the value of angle B, to 1 decimal place. [3]
- 8. Two similar triangles have corresponding sides in the ratio 2 : 5. If the area of the smaller triangle is 8 cm^2 , find the area of the larger triangle. [2]

Section 3 — Statistics & Probability

- 9. The table shows the time (in minutes) 30 students took to complete a puzzle. Calculate an estimate of the mean time. [3]

Time (min)	$0 < t \leq 10$	$10 < t \leq 20$	$20 < t \leq 30$	$30 < t \leq 40$
Frequency	4	12	9	5

- 10. A bag contains 5 red, 3 blue and 2 green counters. One counter is drawn at random. Find the probability that it is **not** blue. [2]
- 11. Two fair dice are thrown together and the scores are added. Find the probability that the total is exactly 9. [2]
- 12. Show that work: A rectangular garden has length $(2x + 3)$ m and width $(x - 1)$ m. The area of the garden is 45 m^2 . Form an equation in x, show that it simplifies to $2x^2 + x - 48 = 0$, and solve for x using the quadratic formula, giving your answer to 2 decimal places. [5]

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Answer Key

1. 4.56×10^{-3}
2. $x = 4, y = 3$
3. $6x^5y^6$
4. $(3x + 1)(2x - 5)$
5. \$5,624
6. 2310 cm^3
7. $BC = 15 \text{ cm}$, angle $B \approx 53.1^\circ$
8. 50 cm^2
9. Mean ≈ 20.0 minutes
10. $7/10$
11. $4/36 = 1/9$
12. $x \approx 4.66$ (rejecting the negative root)