Maths Year 7 — Practice Exam 1 — Answers & Explanations

Answers to the 30 questions in the free preview.

Numeracy — non-calculator

1. D. 5^4

Four 5s multiplied together is 5 to the power of 4, written 5^4. 5 × 4 = 20 adds the 5s instead of multiplying them.

2. Answer: 24 students

40 ÷ 5 = 8, so 1/5 of the students is 8 and 3/5 is 3 × 8 = 24.

3. B. 1 to 2 hours

Between 1 and 2 hours the line is flat: the distance stays at 80 km, so the car was not moving. A steep part of the graph means fast travel, not stopping.

4. A. less likely than not to happen

A probability below 0.5 means the event is less likely to happen than not. 0 is impossible and 1 is certain.

5. A. 13 cm

The range is the largest value minus the smallest: 21 − 8 = 13 cm. 9 cm takes the first height from the last one written.

6. Answer: 12

10% of 80 is 8 and 5% is 4, so 15% is 8 + 4 = 12.

7. A. 5

√144 = 12 and √49 = 7, so the answer is 12 − 7 = 5. 95 subtracts before taking square roots.

8. B. 70

The angles in a triangle add to 180°. z = 180 − 65 − 45 = 70. 110 is 65 + 45, the two angles added instead of taken from 180.

9. Answer: 52

Rectangle: 8 × 5 = 40 cm². Triangle: ½ × 8 × 3 = 12 cm². Total 40 + 12 = 52 cm².

10. B. 0.035

Per cent means out of 100: 3.5 ÷ 100 = 0.035.

11. Answer: $60

Read up from 5 hours to the line, then across: $60. (The cost is $20 plus $8 an hour.)

12. Answer: 56

The rectangle is 10 × 6 = 60 cm² and the hole is 2 × 2 = 4 cm², so 60 − 4 = 56 cm² is left.

13. D. 23

The value 23 appears three times, more than any other age. The leaf 3 on its own is not an age.

14. B. $2^3 \times 3^2$

72 = 2 × 2 × 2 × 3 × 3 = $2^3 \times 3^2$. 8 × 9 does equal 72, but 8 and 9 are not prime. $2^2 \times 3^3$ is 4 × 27 = 108.

15. A. the 10-bar pack

Per bar: $2.40 ÷ 3 = 80c, $3.75 ÷ 5 = 75c and $7.00 ÷ 10 = 70c. The 10-bar pack is cheapest per bar.

16. B. only the students in the school football team

Football team players are likely to enjoy sport more than most students, so their answers would not represent the whole school.

17. Answer: 39 m²

Split the floor into two rectangles: the bottom one is 8 × 3 = 24 m² and the top one is 5 × 3 = 15 m². 24 + 15 = 39 m². Multiplying 8 × 6 gives 48, which counts the missing corner.

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18. Answer: 5/12
Use twelfths: 3/4 = 9/12 and 1/3 = 4/12, so 9/12 − 4/12 = 5/12.

19. C. 20
Subtract 3: x/4 = 5. Multiply by 4: x = 20. 5 forgets the last step.

20. Answer: 75
The angles of a quadrilateral add to 360°: 95 + 80 + 110 = 285, and 360 − 285 = 75.

21. A. 65°
The angles marked x and 115° are co-interior angles between parallel lines, so they add to 180°: x = 180° − 115° = 65°.

22. C. 48
Square first: $4^2 = 16$, then multiply by 3: 48. 144 squares 3m instead of m.

23. A. 4 km
The path is 2 + 3 + 1 + 2 = 8 squares long. 8 × 500 m = 4000 m, which is 4 km. 8 km counts each square as 1 km.

24. Answer: 90
4s = 3.6 m, so s = 0.9 m, which is 90 cm.

25. C. 200
0.52 is about a half and 398 is about 400, so the product is about 200.

26. D. (3, −2)
Reflecting in the x-axis keeps the x-coordinate and changes the sign of the y-coordinate: B(3, 2) becomes (3, −2).

27. Answer: 110
Blue came up 22 times out of 40. 200 spins is 5 times as many, so expect about 22 × 5 = 110 blues.

28. Answer: 9
Blue marbles make up 5/8 of the bag, and 5/8 of the total is 15, so 1/8 is 3 and the bag holds 24 marbles. Red: 24 − 15 = 9.

29. Answer: 4
The scales show 4x + 3 = 2x + 11. Take 2 bags off each side: 2x + 3 = 11, so 2x = 8 and x = 4.

30. C. 115
The angles marked 65° and y° are co-interior: they lie between the parallel lines on the same side of the crossing line, so they add to 180°. y = 180 − 65 = 115. 65 would be right for alternate or corresponding angles.

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PREVIEW

That’s the end of the preview answers

These are the answers to the 30 preview questions. The full answer key covers all 60 questions in Maths Year 7 — Practice Exam 1, with the working behind every mark.

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Numeracy — calculator	30	30

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