

GCSE Foundation Mathematics

Practice Test 1 : Numbers

Instructions:

Answer all questions. Show your working clearly.

Calculators may be used unless stated otherwise.

Time allowed: 90 minutes

Section A: Place Value

1. Write these numbers in order from smallest to largest:

3.7, 3.07, 3.703, 3.073

2. What is the value of the digit 5 in each of these numbers?

(a) 457,382

(b) 0.0059

(c) 25.41

3. Round 47.856 to:

(a) 1 decimal place

(b) 2 significant figures

(c) the nearest whole number

4. Circle the larger number in each pair:

(a) 0.4 or 0.39

(b) 2.105 or 2.15

(c) 0.007 or 0.07

Section B: Integer Arithmetic

5. Calculate:

(a) $(-8) + 15$

(b) $(-12) - (-7)$

(c) $(-6) \times (-9)$

(d) $(-48) \div 8$

6. Work out:

(a) 25×37 (without calculator)

- (b) $756 \div 21$
(c) $(-4) + (-9) - 6$
7. Estimate the value of $\frac{298 \times 51}{19}$ by rounding each number to 1 significant figure.
8. The temperature at midnight was -3°C . By 6am it had dropped by 4°C , then by noon it had risen by 9°C . What was the temperature at noon?

Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:
- (a) $\frac{12}{18}$
(b) $\frac{45}{60}$
(c) $\frac{24}{36}$
10. Put these fractions in order from smallest to largest:
- $\frac{3}{5}, \quad \frac{2}{3}, \quad \frac{5}{8}, \quad \frac{7}{12}$
11. Convert:
- (a) $\frac{3}{8}$ to a decimal
(b) 0.35 to a fraction in its simplest form
(c) $\frac{7}{20}$ to a percentage
(d) 65% to a fraction in its simplest form
12. Calculate:
- (a) 25% of 84
(b) 15% of 240 kg
(c) What percentage is 18 out of 72?
13. A jacket costs 45 before a 20% discount. What is the sale price?
14. The population of a town increases from 8500 to 9350. What is the percentage increase?
15. Work out:
- (a) $\frac{2}{3} + \frac{1}{4}$
(b) $\frac{5}{6} - \frac{1}{3}$
(c) $\frac{3}{4} \times \frac{2}{5}$
(d) $\frac{2}{3} \div \frac{4}{9}$

Section D: Factors, Multiples, and Primes

16. List all the factors of 24.
17. List the first five multiples of 8.
18. Which of these numbers are prime?
- 11, 15, 17, 21, 23, 27
19. Write 60 as a product of its prime factors.

20. Find:

- (a) The HCF of 18 and 24
- (b) The LCM of 12 and 16

21. Find the HCF and LCM of 30 and 45.

Section E: Ratio and Proportion

22. Simplify these ratios:

- (a) $12 : 18$
- (b) $25 : 35 : 40$
- (c) $0.6 : 1.2$

23. Share 120 in the ratio 2 : 3.

24. The ratio of boys to girls in a class is 3 : 4. If there are 12 boys, how many girls are there?

25. A recipe for 6 people needs 400g of flour. How much flour is needed for 9 people?

26. 5 pens cost 3.50. How much do 8 pens cost?

27. It takes 4 workers 6 hours to complete a job. How long would it take 3 workers to complete the same job?

28. y is directly proportional to x . When $x = 6$, $y = 15$. Find y when $x = 10$.

29. p is inversely proportional to q . When $q = 4$, $p = 12$. Find p when $q = 6$.

Section F: Number Operations

30. Calculate:

- (a) $2.7 + 1.45$
- (b) $5.8 - 2.93$
- (c) 3.2×1.5
- (d) $7.2 \div 0.8$

31. Work out:

- (a) $1\frac{1}{4} + 2\frac{2}{3}$
- (b) $3\frac{1}{2} - 1\frac{3}{4}$
- (c) $2\frac{1}{3} \times 1\frac{1}{2}$

32. A shop sells apples at 1.20 per kg. How much do 2.5 kg of apples cost?

33. Find $\frac{3}{5}$ of 40.

34. What is 30% of 2.5 hours in minutes?

35. Calculate the value of $\frac{2.4 \times 15}{0.8}$.

Section G: Standard Form

36. Write these numbers in standard form:

- (a) 4700
- (b) 0.0035
- (c) 250,000
- (d) 0.000064

37. Write these numbers in ordinary form:

- (a) 3.7×10^4
- (b) 5.2×10^{-3}
- (c) 1.25×10^6
- (d) 8.9×10^{-5}

38. Calculate, giving your answer in standard form:

- (a) $(2 \times 10^5) \times (3 \times 10^3)$
- (b) $(8 \times 10^7) \div (2 \times 10^4)$
- (c) $(4 \times 10^{-2}) + (6 \times 10^{-2})$

39. The distance from Earth to the Sun is approximately 1.5×10^8 km. Light travels at 3×10^8 metres per second. How long does it take light to travel from the Sun to Earth? Give your answer in standard form.

Section H: Problem Solving

- 40. A mobile phone contract costs £25 per month plus 12p per minute for calls. In one month, Sarah makes 85 minutes of calls. What is her total bill?
- 41. A rectangular garden is 12 metres long and 8 metres wide. The owner wants to increase both dimensions by 25%. What will be the new area of the garden?
- 42. In a sale, all prices are reduced by 15%. A coat originally costs £80. After the sale, there is a further 10% reduction. What is the final price of the coat?
- 43. A water tank holds 450 litres when full. If $\frac{2}{3}$ of the tank is full, how many litres need to be added to fill it completely?
- 44. The ratio of the ages of Tom and Jerry is 3:5. If Tom is 18 years old, how old will Jerry be in 4 years' time?
- 45. A train travels 240 km in 3 hours. At this rate, how far will it travel in 5 hours?
- 46. £500 is invested at 4% simple interest per year. How much interest is earned after 3 years?
- 47. A recipe serves 4 people and uses 300g of pasta. How much pasta is needed to serve 7 people?

Answer Space

Use this space for your working and answers.

END OF TEST

Total marks: 100

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