

GCSE Foundation Mathematics

Practice Test 4 : 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:

6.9, 6.09, 6.909, 6.099

2. What is the value of the digit 3 in each of these numbers?

(a) 734,628

(b) 0.0034

(c) 27.13

3. Round 84.927 to:

(a) 1 decimal place

(b) 2 significant figures

(c) the nearest whole number

4. Circle the larger number in each pair:

(a) 0.7 or 0.68

(b) 1.304 or 1.34

(c) 0.006 or 0.06

Section B: Integer Arithmetic

5. Calculate:

(a) $(-16) + 23$

(b) $(-20) - (-12)$

(c) $(-8) \times (-11)$

(d) $(-84) \div 7$

6. Work out:

(a) 52×38 (without calculator)

- (b) $1116 \div 31$
(c) $(-9) + (-14) - 7$
7. Estimate the value of $\frac{523 \times 89}{28}$ by rounding each number to 1 significant figure.
8. The temperature at 4am was -8°C . By 7am it had risen by 3°C , then by 2pm it had risen by another 11°C . What was the temperature at 2pm?

Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:
- (a) $\frac{21}{35}$
(b) $\frac{36}{54}$
(c) $\frac{45}{72}$
10. Put these fractions in order from smallest to largest:
- $\frac{4}{9}, \quad \frac{5}{12}, \quad \frac{3}{8}, \quad \frac{2}{5}$
11. Convert:
- (a) $\frac{3}{16}$ to a decimal
(b) 0.64 to a fraction in its simplest form
(c) $\frac{13}{25}$ to a percentage
(d) 95% to a fraction in its simplest form
12. Calculate:
- (a) 40% of 125
(b) 28% of 275 kg
(c) What percentage is 36 out of 96?
13. A camera costs 240 before a 35% discount. What is the sale price?
14. The attendance at a concert increases from 650 to 715. What is the percentage increase?
15. Work out:
- (a) $\frac{7}{8} + \frac{1}{12}$
(b) $\frac{11}{12} - \frac{1}{3}$
(c) $\frac{3}{8} \times \frac{4}{9}$
(d) $\frac{7}{8} \div \frac{3}{16}$

Section D: Factors, Multiples, and Primes

16. List all the factors of 54.
17. List the first five multiples of 11.
18. Which of these numbers are prime?
- 18, 23, 26, 41, 49, 43
19. Write 90 as a product of its prime factors.

20. Find:

- (a) The HCF of 32 and 48
- (b) The LCM of 14 and 21

21. Find the HCF and LCM of 48 and 72.

Section E: Ratio and Proportion

22. Simplify these ratios:

- (a) 21 : 28
- (b) 24 : 36 : 48
- (c) 1.5 : 3.0

23. Share 280 in the ratio 5 : 2.

24. The ratio of fiction to non-fiction books in a library is 7 : 3. If there are 42 fiction books, how many non-fiction books are there?

25. A recipe for 12 people needs 900g of meat. How much meat is needed for 8 people?

26. 9 postcards cost 6.30. How much do 13 postcards cost?

27. It takes 7 workers 9 hours to complete a project. How long would it take 3 workers to complete the same project?

28. p is directly proportional to q . When $q = 12$, $p = 48$. Find p when $q = 18$.

29. u is inversely proportional to v . When $v = 8$, $u = 12$. Find u when $v = 6$.

Section F: Number Operations

30. Calculate:

- (a) $5.7 + 4.38$
- (b) $9.2 - 5.67$
- (c) 6.3×4.5
- (d) $10.8 \div 1.8$

31. Work out:

- (a) $4\frac{1}{6} + 3\frac{2}{9}$
- (b) $6\frac{1}{8} - 3\frac{3}{4}$
- (c) $2\frac{2}{7} \times 1\frac{3}{4}$

32. A butcher sells sausages at 3.20 per kg. How much do 2.8 kg of sausages cost?

33. Find $\frac{7}{9}$ of 54.

34. What is 55% of 2.4 hours in minutes?

35. Calculate the value of $\frac{6.4 \times 18}{1.6}$.

Section G: Standard Form

36. Write these numbers in standard form:

- (a) 7300
- (b) 0.0058
- (c) 620,000
- (d) 0.000076

37. Write these numbers in ordinary form:

- (a) 8.4×10^4
- (b) 3.7×10^{-3}
- (c) 2.56×10^6
- (d) 4.8×10^{-8}

38. Calculate, giving your answer in standard form:

- (a) $(6 \times 10^5) \times (4 \times 10^2)$
- (b) $(1.8 \times 10^7) \div (6 \times 10^4)$
- (c) $(8 \times 10^{-2}) + (3 \times 10^{-2})$

39. The speed of sound is approximately 3.4×10^2 metres per second. How far does sound travel in 5×10^3 seconds? Give your answer in standard form.

Section H: Problem Solving

- (d) A car insurance policy costs £28 per month plus 6p per mile driven. In one month, Marcus drives 450 miles. What is his total insurance cost?
- (e) A rectangular warehouse is 24 metres long and 16 metres wide. The owner wants to increase both dimensions by 15%. What will be the new area of the warehouse?
- (f) In a flash sale, all prices are reduced by 40%. A tablet originally costs £350. After the sale, there is a further 5% reduction for loyalty members. What is the final price of the tablet?
- (g) A fish tank holds 120 litres when full. If $\frac{7}{8}$ of the tank is full, how many litres need to be added to fill it completely?
- (h) The ratio of the speeds of two trains is 3:7. If the slower train travels at 60 km/h, what is the speed of the faster train?
- (i) A bus travels 270 km in 3.5 hours. At this rate, how far will it travel in 5.5 hours?
- (j) £1200 is invested at 6% simple interest per year. How much interest is earned after 18 months?
- (k) A recipe serves 15 people and uses 750g of potatoes. How much potatoes are needed to serve 22 people?

Answer Space

Use this space for your working and answers.

END OF TEST

Total marks: 100

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