

GCSE Foundation Mathematics

Practice Test 8 : 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:

6.2, 6.02, 6.202, 6.022

2. What is the value of the digit 8 in each of these numbers?

(a) 835,291

(b) 0.0084

(c) 52.68

3. Round 83.457 to:

(a) 1 decimal place

(b) 2 significant figures

(c) the nearest whole number

4. Circle the larger number in each pair:

(a) 0.6 or 0.59

(b) 5.409 or 5.49

(c) 0.007 or 0.07

Section B: Integer Arithmetic

5. Calculate:

(a) $(-26) + 41$

(b) $(-37) - (-23)$

(c) $(-14) \times (-9)$

(d) $(-168) \div 12$

6. Work out:

(a) 46×38 (without calculator)

- (b) $1512 \div 36$
(c) $(-18) + (-25) - 9$
7. Estimate the value of $\frac{694 \times 52}{28}$ by rounding each number to 1 significant figure.
8. The temperature at 8am was -14°C . By noon it had risen by 8°C , then by 7pm it had risen by another 12°C . What was the temperature at 7pm?

Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:
- (a) $\frac{36}{60}$
(b) $\frac{42}{63}$
(c) $\frac{64}{112}$
10. Put these fractions in order from smallest to largest:
- $$\frac{5}{9}, \quad \frac{7}{12}, \quad \frac{3}{4}, \quad \frac{2}{3}$$
11. Convert:
- (a) $\frac{17}{32}$ to a decimal
(b) 0.72 to a fraction in its simplest form
(c) $\frac{21}{25}$ to a percentage
(d) 75% to a fraction in its simplest form
12. Calculate:
- (a) 64% of 315
(b) 28% of 725 kg
(c) What percentage is 72 out of 160?
13. A sofa costs 580 before a 30% discount. What is the sale price?
14. The attendance at a concert increases from 1840 to 2024. What is the percentage increase?
15. Work out:
- (a) $\frac{7}{10} + \frac{1}{6}$
(b) $\frac{11}{12} - \frac{2}{9}$
(c) $\frac{8}{15} \times \frac{5}{16}$
(d) $\frac{7}{8} \div \frac{3}{16}$

Section D: Factors, Multiples, and Primes

16. List all the factors of 96.
17. List the first five multiples of 19.
18. Which of these numbers are prime?
- $$28, \quad 41, \quad 49, \quad 67, \quad 74, \quad 73$$
19. Write 144 as a product of its prime factors.

20. Find:

- (a) The HCF of 54 and 81
- (b) The LCM of 20 and 30

21. Find the HCF and LCM of 72 and 96.

Section E: Ratio and Proportion

22. Simplify these ratios:

- (a) $35 : 45$
- (b) $24 : 40 : 56$
- (c) $4.8 : 7.2$

23. Share 630 in the ratio 6 : 3.

24. The ratio of cats to dogs in a pet shop is 4 : 9. If there are 28 cats, how many dogs are there?

25. A recipe for 20 people needs 1200g of sugar. How much sugar is needed for 35 people?

26. 24 batteries cost 16.80. How much do 32 batteries cost?

27. It takes 10 machines 7 hours to produce a batch of goods. How long would it take 14 machines to produce the same batch?

28. w is directly proportional to z . When $z = 12$, $w = 48$. Find w when $z = 17$.

29. r is inversely proportional to s . When $s = 15$, $r = 20$. Find r when $s = 25$.

Section F: Number Operations

30. Calculate:

- (a) $8.6 + 9.74$
- (b) $14.5 - 7.93$
- (c) 6.8×7.4
- (d) $21.6 \div 4.5$

31. Work out:

- (a) $5\frac{3}{4} + 6\frac{7}{10}$
- (b) $8\frac{5}{12} - 4\frac{2}{3}$
- (c) $5\frac{1}{3} \times 1\frac{3}{8}$

32. A baker sells cupcakes at 6.90 per half-dozen. How much do 2.5 half-dozens cost?

33. Find $\frac{8}{11}$ of 88.

34. What is 65% of 4.2 hours in minutes?

35. Calculate the value of $\frac{12.8 \times 25}{3.2}$.

Section G: Standard Form

36. Write these numbers in standard form:

- (a) 8200
- (b) 0.0047
- (c) 630,000
- (d) 0.000095

37. Write these numbers in ordinary form:

- (a) 7.3×10^3
- (b) 5.6×10^{-4}
- (c) 2.47×10^6
- (d) 9.2×10^{-5}

38. Calculate, giving your answer in standard form:

- (a) $(5 \times 10^7) \times (4 \times 10^2)$
- (b) $(2.4 \times 10^9) \div (8 \times 10^4)$
- (c) $(7 \times 10^{-3}) + (5 \times 10^{-3})$

39. A factory produces 3.8×10^5 items per month. If each item uses 1.6×10^{-2} kg of material, how much material does the factory use per month? Give your answer in standard form.

Section H: Problem Solving

- 40. A cinema ticket costs £12 plus a £3.50 booking fee per transaction. James buys 4 tickets in one transaction. What is his total cost?
- 41. A rectangular car park is 48 metres long and 32 metres wide. The manager wants to increase both dimensions by 15%. What will be the new area of the car park?
- 42. In a weekend sale, all prices are reduced by 40%. A television originally costs £850. After the sale, there is a further 5% reduction for store card holders. What is the final price of the television?
- 43. A water bottle holds 85ml when full. If $\frac{7}{17}$ of the bottle is full, how many ml need to be added to fill it completely?
- 44. The ratio of the weights of two parcels is 9:5. If the heavier parcel weighs 72 kg, how much does the lighter parcel weigh?
- 45. A bus travels 384 km in 4.8 hours. At this rate, how far will it travel in 6.5 hours?
- 46. £2800 is invested at 5.5% simple interest per year. How much interest is earned after 20 months?
- 47. A recipe serves 28 people and uses 1960g of potatoes. How much potatoes are needed to serve 21 people?

Answer Space

Use this space for your working and answers.

END OF TEST

Total marks: 100

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