

GCSE Foundation Mathematics

Practice Test 5 : 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:

9.1, 9.01, 9.101, 9.011

2. What is the value of the digit 7 in each of these numbers?

(a) 817,395

(b) 0.0074

(c) 46.37

3. Round 39.465 to:

(a) 1 decimal place

(b) 2 significant figures

(c) the nearest whole number

4. Circle the larger number in each pair:

(a) 0.8 or 0.79

(b) 2.508 or 2.58

(c) 0.004 or 0.04

Section B: Integer Arithmetic

5. Calculate:

(a) $(-18) + 25$

(b) $(-22) - (-14)$

(c) $(-12) \times (-6)$

(d) $(-96) \div 8$

6. Work out:

(a) 37×46 (without calculator)

- (b) $1242 \div 27$
(c) $(-11) + (-16) - 5$
7. Estimate the value of $\frac{612 \times 94}{31}$ by rounding each number to 1 significant figure.
8. The temperature at 10pm was -6°C . During the night it dropped by 7°C , then by 4pm the next day it had risen by 15°C . What was the temperature at 4pm?

Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:
- (a) $\frac{24}{40}$
(b) $\frac{42}{63}$
(c) $\frac{56}{84}$
10. Put these fractions in order from smallest to largest:
- $$\frac{3}{7}, \quad \frac{4}{9}, \quad \frac{5}{11}, \quad \frac{1}{2}$$
11. Convert:
- (a) $\frac{9}{16}$ to a decimal
(b) 0.78 to a fraction in its simplest form
(c) $\frac{17}{25}$ to a percentage
(d) 45% to a fraction in its simplest form
12. Calculate:
- (a) 45% of 80
(b) 32% of 525 kg
(c) What percentage is 42 out of 168?
13. A watch costs 150 before a 30% discount. What is the sale price?
14. The number of students in a school increases from 980 to 1078. What is the percentage increase?
15. Work out:
- (a) $\frac{5}{9} + \frac{1}{6}$
(b) $\frac{13}{15} - \frac{2}{5}$
(c) $\frac{5}{12} \times \frac{3}{10}$
(d) $\frac{9}{10} \div \frac{3}{20}$

Section D: Factors, Multiples, and Primes

16. List all the factors of 66.
17. List the first five multiples of 13.
18. Which of these numbers are prime?
- $$19, \quad 24, \quad 28, \quad 47, \quad 51, \quad 53$$
19. Write 96 as a product of its prime factors.

20. Find:

- (a) The HCF of 36 and 54
- (b) The LCM of 16 and 24

21. Find the HCF and LCM of 60 and 84.

Section E: Ratio and Proportion

22. Simplify these ratios:

- (a) $24 : 32$
- (b) $35 : 42 : 56$
- (c) $1.8 : 3.6$

23. Share 350 in the ratio 6 : 4.

24. The ratio of smartphones to tablets in a store is 8 : 3. If there are 48 smartphones, how many tablets are there?

25. A recipe for 16 people needs 1200g of vegetables. How much vegetables are needed for 6 people?

26. 12 erasers cost 8.40. How much do 17 erasers cost?

27. It takes 8 cleaners 5 hours to clean a building. How long would it take 10 cleaners to clean the same building?

28. k is directly proportional to l . When $l = 15$, $k = 75$. Find k when $l = 21$.

29. x is inversely proportional to y . When $y = 9$, $x = 16$. Find x when $y = 12$.

Section F: Number Operations

30. Calculate:

- (a) $6.9 + 5.47$
- (b) $10.3 - 6.74$
- (c) 7.2×5.6
- (d) $12.6 \div 2.1$

31. Work out:

- (a) $5\frac{2}{7} + 4\frac{1}{14}$
- (b) $7\frac{1}{12} - 4\frac{5}{6}$
- (c) $3\frac{1}{4} \times 1\frac{3}{5}$

32. A florist sells roses at 4.80 per dozen. How much do 3.5 dozen roses cost?

33. Find $\frac{8}{9}$ of 63.

34. What is 65% of 1.8 hours in minutes?

35. Calculate the value of $\frac{8.1 \times 24}{2.7}$.

Section G: Standard Form

36. Write these numbers in standard form:

- (a) 8200
- (b) 0.0039
- (c) 750,000
- (d) 0.000065

37. Write these numbers in ordinary form:

- (a) 9.7×10^3
- (b) 4.5×10^{-4}
- (c) 3.28×10^7
- (d) 7.1×10^{-9}

38. Calculate, giving your answer in standard form:

- (a) $(5 \times 10^7) \times (3 \times 10^4)$
- (b) $(2.4 \times 10^9) \div (8 \times 10^6)$
- (c) $(9 \times 10^{-3}) + (4 \times 10^{-3})$

39. A bacteria culture doubles every hour. If it starts with 3×10^4 bacteria, how many bacteria will there be after 8 hours? Give your answer in standard form.

Section H: Problem Solving

- 40. A parking app costs £18 per month plus 9p per hour parked. In one month, Lisa parks for 75 hours. What is her total parking cost?
- 41. A rectangular tennis court is 36 metres long and 18 metres wide. The owner wants to increase both dimensions by 25%. What will be the new area of the tennis court?
- 42. In a winter sale, all prices are reduced by 45%. A refrigerator originally costs £640. After the sale, there is a further 6% reduction for bulk buyers. What is the final price of the refrigerator?
- 43. A coffee machine holds 2.4 litres when full. If $\frac{5}{6}$ of the machine is full, how many litres need to be added to fill it completely?
- 44. The ratio of the weights of two parcels is 7:4. If the heavier parcel weighs 35 kg, what is the weight of the lighter parcel?
- 45. A motorbike travels 315 km in 4.5 hours. At this rate, how far will it travel in 7 hours?
- 46. £1800 is invested at 2.5% simple interest per year. How much interest is earned after 30 months?
- 47. A recipe serves 20 people and uses 1400g of cheese. How much cheese is needed to serve 14 people?

Answer Space

Use this space for your working and answers.

END OF TEST

Total marks: 100

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