

GCSE Foundation Mathematics

Practice Test 7 : 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:

8.4, 8.04, 8.404, 8.044

2. What is the value of the digit 6 in each of these numbers?

(a) 672,415

(b) 0.0063

(c) 43.76

3. Round 94.726 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 0.69

(b) 4.508 or 4.58

(c) 0.009 or 0.09

Section B: Integer Arithmetic

5. Calculate:

(a) $(-23) + 38$

(b) $(-31) - (-19)$

(c) $(-15) \times (-7)$

(d) $(-144) \div 8$

6. Work out:

(a) 52×47 (without calculator)

- (b) $1428 \div 28$
(c) $(-15) + (-22) - 8$
7. Estimate the value of $\frac{823 \times 48}{31}$ by rounding each number to 1 significant figure.
8. The temperature at 7am was -12°C . By 11am it had risen by 6°C , then by 6pm it had risen by another 15°C . What was the temperature at 6pm?

Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:
- (a) $\frac{32}{56}$
(b) $\frac{54}{81}$
(c) $\frac{72}{108}$
10. Put these fractions in order from smallest to largest:
- $$\frac{7}{12}, \quad \frac{3}{5}, \quad \frac{5}{8}, \quad \frac{2}{3}$$
11. Convert:
- (a) $\frac{13}{20}$ to a decimal
(b) 0.76 to a fraction in its simplest form
(c) $\frac{17}{25}$ to a percentage
(d) 65% to a fraction in its simplest form
12. Calculate:
- (a) 52% of 245
(b) 24% of 875 kg
(c) What percentage is 63 out of 180?
13. A laptop costs 460 before a 35% discount. What is the sale price?
14. The number of visitors to a museum increases from 1680 to 1890. What is the percentage increase?
15. Work out:
- (a) $\frac{5}{8} + \frac{3}{10}$
(b) $\frac{13}{16} - \frac{1}{4}$
(c) $\frac{7}{9} \times \frac{4}{21}$
(d) $\frac{9}{10} \div \frac{3}{20}$

Section D: Factors, Multiples, and Primes

16. List all the factors of 84.
17. List the first five multiples of 17.
18. Which of these numbers are prime?

24, 37, 42, 53, 68, 71

19. Write 126 as a product of its prime factors.
20. Find:
- (a) The HCF of 48 and 72
 - (b) The LCM of 15 and 35
21. Find the HCF and LCM of 63 and 84.

Section E: Ratio and Proportion

22. Simplify these ratios:
- (a) $32 : 48$
 - (b) $21 : 35 : 42$
 - (c) $3.6 : 5.4$
23. Share 540 in the ratio 8 : 4.
24. The ratio of red to blue marbles in a jar is 3 : 7. If there are 21 red marbles, how many blue marbles are there?
25. A recipe for 24 people needs 1440g of flour. How much flour is needed for 30 people?
26. 18 pencils cost 13.50. How much do 26 pencils cost?
27. It takes 8 workers 9 hours to complete a job. How long would it take 12 workers to complete the same job?
28. v is directly proportional to u . When $u = 15$, $v = 60$. Find v when $u = 22$.
29. p is inversely proportional to q . When $q = 16$, $p = 12$. Find p when $q = 24$.

Section F: Number Operations

30. Calculate:
- (a) $9.2 + 7.68$
 - (b) $13.7 - 8.94$
 - (c) 7.6×5.8
 - (d) $18.9 \div 3.5$
31. Work out:
- (a) $7\frac{2}{5} + 4\frac{5}{12}$
 - (b) $9\frac{3}{16} - 6\frac{3}{4}$
 - (c) $3\frac{2}{7} \times 2\frac{1}{4}$
32. A florist sells roses at 8.40 per dozen. How much do 3.5 dozen roses cost?
33. Find $\frac{7}{13}$ of 91.
34. What is 80% of 3.4 hours in minutes?
35. Calculate the value of $\frac{8.4 \times 45}{3.6}$.

Section G: Standard Form

36. Write these numbers in standard form:

- (a) 7600
- (b) 0.0034
- (c) 920,000
- (d) 0.000082

37. Write these numbers in ordinary form:

- (a) 6.7×10^4
- (b) 4.9×10^{-3}
- (c) 3.28×10^5
- (d) 7.5×10^{-6}

38. Calculate, giving your answer in standard form:

- (a) $(8 \times 10^5) \times (3 \times 10^4)$
- (b) $(4.8 \times 10^7) \div (6 \times 10^3)$
- (c) $(9 \times 10^{-5}) + (4 \times 10^{-5})$

39. A country has a population of 5.7×10^7 people. If each person produces an average of 2.3×10^2 kg of waste per year, how much waste does the country produce per year? Give your answer in standard form.

Section H: Problem Solving

- 40. A parking meter charges £18 per day plus 8p per minute. In one day, Sarah parks for 145 minutes. What is her total parking cost?
- 41. A rectangular garden is 36 metres long and 28 metres wide. The owner wants to increase both dimensions by 25%. What will be the new area of the garden?
- 42. In a clearance sale, all prices are reduced by 45%. A wardrobe originally costs £640. After the sale, there is a further 6% reduction for loyalty card holders. What is the final price of the wardrobe?
- 43. A fuel tank holds 72 litres when full. If $\frac{5}{6}$ of the tank is full, how many litres need to be added to fill it completely?
- 44. The ratio of the heights of two buildings is 7:4. If the taller building is 84 metres high, how tall is the shorter building?
- 45. A train travels 560 km in 3.5 hours. At this rate, how far will it travel in 5.25 hours?
- 46. £3200 is invested at 4.5% simple interest per year. How much interest is earned after 18 months?
- 47. A recipe serves 32 people and uses 2240g of rice. How much rice is needed to serve 24 people?

Answer Space

Use this space for your working and answers.

END OF TEST

Total marks: 100

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