GCSE Foundation Mathematics
Practice Test 9 : 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:

$$9.5, \quad 9.05, \quad 9.505, \quad 9.055$$

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

   (a) 341,726
   (b) 0.0037
   (c) 68.23

3. Round 67.394 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) 2.607 or 2.67
   (c) 0.006 or 0.06

Section B: Integer Arithmetic

5. Calculate:

   (a) $(-29) + 45$
   (b) $(-42) - (-28)$
   (c) $(-16) \times (-11)$
   (d) $(-182) \div 14$

6. Work out:

   (a) 58×43 (without calculator)

(b) $1596 \div 42$

(c) $(-21) + (-33) - 12$

7. Estimate the value of $\frac{759 \times 38}{19}$ by rounding each number to 1 significant figure.

8. The temperature at 5am was $-16C$. By 9am it had risen by $9C$, then by 8pm it had risen by another $17C$. What was the temperature at 8pm?

Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:

    (a) $\frac{39}{65}$

    (b) $\frac{45}{75}$

    (c) $\frac{56}{98}$

10. Put these fractions in order from smallest to largest:

$$\frac{4}{7}, \quad \frac{5}{8}, \quad \frac{7}{12}, \quad \frac{3}{5}$$

11. Convert:

    (a) $\frac{19}{32}$ to a decimal

    (b) 0.68 to a fraction in its simplest form

    (c) $\frac{23}{25}$ to a percentage

    (d) 85% to a fraction in its simplest form

12. Calculate:

    (a) 56% of 285

    (b) 32% of 675 kg

    (c) What percentage is 84 out of 200?

13. A camera costs 520 before a 25% discount. What is the sale price?

14. The membership of a sports club increases from 1620 to 1782. What is the percentage increase?

15. Work out:

    (a) $\frac{3}{5} + \frac{5}{12}$

    (b) $\frac{13}{15} - \frac{1}{3}$

    (c) $\frac{9}{14} \times \frac{7}{18}$

    (d) $\frac{5}{6} \div \frac{2}{15}$

Section D: Factors, Multiples, and Primes

16. List all the factors of 90.

17. List the first five multiples of 23.

18. Which of these numbers are prime?

$$33, \quad 43, \quad 51, \quad 79, \quad 86, \quad 83$$

19. Write 180 as a product of its prime factors.

20. Find:

    (a) The HCF of 36 and 64

    (b) The LCM of 24 and 40

21. Find the HCF and LCM of 45 and 75.

Section E: Ratio and Proportion

22. Simplify these ratios:

    (a) $39 : 52$

    (b) $30 : 45 : 60$

    (c) $5.2 : 6.5$

23. Share 720 in the ratio $9 : 7$.

24. The ratio of apples to oranges in a fruit basket is $5 : 8$. If there are 35 apples, how many oranges are there?

25. A recipe for 16 people needs 960g of meat. How much meat is needed for 28 people?

26. 30 stamps cost 22.50. How much do 42 stamps cost?

27. It takes 12 gardeners 5 hours to plant a garden. How long would it take 15 gardeners to plant the same garden?

28. y is directly proportional to x. When $x = 14$, $y = 56$. Find y when $x = 19$.

29. a is inversely proportional to b. When $b = 18$, $a = 24$. Find a when $b = 32$.

Section F: Number Operations

30. Calculate:

    (a) $7.4 + 8.67$

    (b) $12.8 - 6.94$

    (c) 9.3×5.6

    (d) $19.2 \div 3.2$

31. Work out:

    (a) $8\frac{1}{6} + 3\frac{7}{8}$

    (b) $7\frac{7}{12} - 5\frac{3}{4}$

    (c) $2\frac{3}{5} \times 3\frac{1}{13}$

32. A chocolatier sells boxes at 9.60 per box. How much do 4.5 boxes cost?

33. Find $\frac{6}{17}$ of 102.

34. What is 90% of 2.8 hours in minutes?

35. Calculate the value of $\frac{11.2 \times 30}{4.8}$.

Section G: Standard Form

36. Write these numbers in standard form:

    (a) 5400

    (b) 0.0058

    (c) 780, 000

    (d) 0.000073

37. Write these numbers in ordinary form:

    (a) 8.9×10^4

    (b) 3.7×10^{-3}

    (c) 5.62×10^5

    (d) 6.8×10^{-6}

38. Calculate, giving your answer in standard form:

    (a) $(6 \times 10^4) \times (7 \times 10^3)$

    (b) $(3.5 \times 10^8) \div (5 \times 10^2)$

    (c) $(8 \times 10^{-4}) + (3 \times 10^{-4})$

39. A space agency launches 2.4×10^2 satellites. If each satellite costs 4.5×10^6 dollars, what is the total cost? Give your answer in standard form.

Section H: Problem Solving

40. A taxi charges £4.50 for the first mile plus £2.80 per additional mile. How much does a 7-mile journey cost?

41. A rectangular field is 54 metres long and 36 metres wide. The farmer wants to increase both dimensions by 30%. What will be the new area of the field?

42. In a flash sale, all prices are reduced by 35%. A dining set originally costs £960. After the sale, there is a further 8% reduction for early bird customers. What is the final price of the dining set?

43. A coffee machine reservoir holds 95ml when full. If $\frac{11}{19}$ of the reservoir is full, how many ml need to be added to fill it completely?

44. The ratio of the areas of two gardens is 8:3. If the larger garden has an area of 96 square metres, what is the area of the smaller garden?

45. A cyclist travels 432 km in 5.4 hours. At this rate, how far will they travel in 7.5 hours?

46. £4500 is invested at 6.5% simple interest per year. How much interest is earned after 16 months?

47. A recipe serves 36 people and uses 2520g of vegetables. How much vegetables are needed to serve 27 people?

Answer Space

Use this space for your working and answers.

END OF TEST

Total marks: 100

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