GCSE Foundation Mathematics
Practice Test 2 : 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:

$$5.2, \quad 5.02, \quad 5.202, \quad 5.022$$

2. What is the value of the digit 8 in each of these numbers?
   (a) 683,541
   (b) 0.0087
   (c) 39.18

3. Round 63.274 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 0.58
   (b) 3.209 or 3.29
   (c) 0.005 or 0.05

Section B: Integer Arithmetic

5. Calculate:
   (a) $(-12) + 19$
   (b) $(-15) - (-9)$
   (c) $(-7) \times (-8)$
   (d) $(-63) \div 9$

6. Work out:
   (a) 34×26 (without calculator)

(b) $828 \div 23$

(c) $(-6) + (-11) - 8$

7. Estimate the value of $\frac{412 \times 68}{21}$ by rounding each number to 1 significant figure.

8. The temperature at 5am was $-7C$. By 9am it had risen by $5C$, then by 3pm it had risen by another $8C$. What was the temperature at 3pm?

Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:

(a) $\frac{15}{25}$

(b) $\frac{28}{42}$

(c) $\frac{32}{48}$

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

$$\frac{4}{7}, \quad \frac{3}{5}, \quad \frac{7}{10}, \quad \frac{5}{9}$$

11. Convert:

(a) $\frac{5}{8}$ to a decimal

(b) 0.42 to a fraction in its simplest form

(c) $\frac{9}{25}$ to a percentage

(d) 75% to a fraction in its simplest form

12. Calculate:

(a) 30% of 96

(b) 18% of 350 kg

(c) What percentage is 24 out of 64?

13. A television costs 320 before a 15% discount. What is the sale price?

14. The population of a village increases from 1200 to 1320. What is the percentage increase?

15. Work out:

(a) $\frac{3}{4} + \frac{1}{6}$

(b) $\frac{7}{8} - \frac{1}{4}$

(c) $\frac{2}{5} \times \frac{3}{7}$

(d) $\frac{3}{4} \div \frac{5}{8}$

Section D: Factors, Multiples, and Primes

16. List all the factors of 36.

17. List the first five multiples of 7.

18. Which of these numbers are prime?

$$13, \quad 16, \quad 19, \quad 25, \quad 29, \quad 33$$

19. Write 84 as a product of its prime factors.

20. Find:
    (a) The HCF of 24 and 36
    (b) The LCM of 15 and 20
21. Find the HCF and LCM of 42 and 63.

Section E: Ratio and Proportion

22. Simplify these ratios:
    (a) $15 : 20$
    (b) $30 : 45 : 60$
    (c) $0.8 : 1.6$
23. Share 160 in the ratio $3 : 5$.
24. The ratio of cats to dogs in a shelter is $5 : 7$. If there are 20 cats, how many dogs are there?
25. A recipe for 8 people needs 600g of sugar. How much sugar is needed for 12 people?
26. 7 notebooks cost 4.90. How much do 11 notebooks cost?
27. It takes 6 machines 8 hours to complete a task. How long would it take 4 machines to complete the same task?
28. m is directly proportional to n. When $n = 8$, $m = 20$. Find m when $n = 12$.
29. a is inversely proportional to b. When $b = 5$, $a = 15$. Find a when $b = 9$.

Section F: Number Operations

30. Calculate:
    (a) $3.8 + 2.65$
    (b) $7.4 - 3.76$
    (c) 4.5×2.8
    (d) $9.6 \div 1.2$
31. Work out:
    (a) $2\frac{1}{3} + 1\frac{3}{4}$
    (b) $4\frac{1}{6} - 2\frac{2}{3}$
    (c) $1\frac{2}{5} \times 2\frac{1}{4}$
32. A supermarket sells bananas at 1.80 per kg. How much do 3.5 kg of bananas cost?
33. Find $\frac{4}{7}$ of 56.
34. What is 40% of 1.5 hours in minutes?
35. Calculate the value of $\frac{3.6 \times 20}{1.2}$.

Section G: Standard Form

36. Write these numbers in standard form:

    (a) 6800

    (b) 0.0047

    (c) $390,000$

    (d) 0.000082

37. Write these numbers in ordinary form:

    (a) 4.6×10^3

    (b) 7.8×10^{-4}

    (c) 2.35×10^5

    (d) 6.7×10^{-6}

38. Calculate, giving your answer in standard form:

    (a) $(3 \times 10^4) \times (5 \times 10^2)$

    (b) $(9 \times 10^6) \div (3 \times 10^3)$

    (c) $(7 \times 10^{-3}) + (2 \times 10^{-3})$

39. The mass of a proton is approximately 1.7×10^{-27} kg. What is the total mass of 6×10^{23} protons? Give your answer in standard form.

Section H: Problem Solving

40. A gym membership costs £35 per month plus 8p per minute for personal training. In one month, David uses 120 minutes of personal training. What is his total bill?

41. A rectangular patio is 15 metres long and 10 metres wide. The owner wants to increase both dimensions by 20%. What will be the new area of the patio?

42. In a clearance sale, all prices are reduced by 25%. A sofa originally costs £480. After the sale, there is a further 12% reduction for cash payment. What is the final price of the sofa?

43. A fuel tank holds 60 litres when full. If $\frac{3}{4}$ of the tank is full, how many litres need to be added to fill it completely?

44. The ratio of the weights of two packages is 4:7. If the lighter package weighs 12 kg, what will be the total weight of both packages?

45. A car travels 180 km in 2.5 hours. At this rate, how far will it travel in 4 hours?

46. £750 is invested at 3% simple interest per year. How much interest is earned after 4 years?

47. A recipe serves 6 people and uses 450g of chicken. How much chicken is needed to serve 10 people?

Answer Space

Use this space for your working and answers.

END OF TEST

Total marks: 100

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stepupmaths.co.uk