

# GCSE Foundation Mathematics

## Practice Test 6 : 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:

7.3, 7.03, 7.303, 7.033

2. What is the value of the digit 4 in each of these numbers?

(a) 549,762

(b) 0.0041

(c) 68.54

3. Round 76.583 to:

(a) 1 decimal place

(b) 2 significant figures

(c) the nearest whole number

4. Circle the larger number in each pair:

(a) 0.5 or 0.49

(b) 3.607 or 3.67

(c) 0.008 or 0.08

### Section B: Integer Arithmetic

5. Calculate:

(a)  $(-19) + 27$

(b)  $(-24) - (-16)$

(c)  $(-13) \times (-8)$

(d)  $(-105) \div 7$

6. Work out:

(a)  $48 \times 35$  (without calculator)

- (b)  $1368 \div 24$   
(c)  $(-12) + (-18) - 6$
7. Estimate the value of  $\frac{718 \times 63}{29}$  by rounding each number to 1 significant figure.
8. The temperature at 6am was  $-9^{\circ}\text{C}$ . By 10am it had risen by  $4^{\circ}\text{C}$ , then by 5pm it had risen by another  $13^{\circ}\text{C}$ . What was the temperature at 5pm?

## Section C: Fractions, Decimals, and Percentages

9. Simplify these fractions:
- (a)  $\frac{27}{45}$   
(b)  $\frac{48}{72}$   
(c)  $\frac{63}{96}$
10. Put these fractions in order from smallest to largest:
- $$\frac{6}{11}, \quad \frac{1}{2}, \quad \frac{4}{7}, \quad \frac{5}{9}$$
11. Convert:
- (a)  $\frac{11}{16}$  to a decimal  
(b) 0.84 to a fraction in its simplest form  
(c)  $\frac{19}{25}$  to a percentage  
(d) 55% to a fraction in its simplest form
12. Calculate:
- (a) 48% of 175  
(b) 36% of 625 kg  
(c) What percentage is 54 out of 144?
13. A printer costs 280 before a 40% discount. What is the sale price?
14. The membership of a gym increases from 1250 to 1375. What is the percentage increase?
15. Work out:
- (a)  $\frac{7}{12} + \frac{1}{8}$   
(b)  $\frac{14}{15} - \frac{3}{5}$   
(c)  $\frac{6}{11} \times \frac{5}{12}$   
(d)  $\frac{11}{12} \div \frac{5}{24}$

## Section D: Factors, Multiples, and Primes

16. List all the factors of 78.
17. List the first five multiples of 14.
18. Which of these numbers are prime?
- $$20, \quad 29, \quad 32, \quad 59, \quad 62, \quad 61$$
19. Write 108 as a product of its prime factors.

20. Find:

- (a) The HCF of 40 and 60
- (b) The LCM of 18 and 27

21. Find the HCF and LCM of 56 and 70.

## Section E: Ratio and Proportion

22. Simplify these ratios:

- (a)  $27 : 36$
- (b)  $28 : 35 : 49$
- (c)  $2.1 : 4.2$

23. Share 420 in the ratio 7 : 5.

24. The ratio of hardback to paperback books in a bookstore is 2 : 9. If there are 18 hardback books, how many paperback books are there?

25. A recipe for 18 people needs 1080g of pasta. How much pasta is needed for 25 people?

26. 15 stickers cost 10.50. How much do 22 stickers cost?

27. It takes 9 gardeners 6 hours to plant a field. How long would it take 12 gardeners to plant the same field?

28.  $t$  is directly proportional to  $s$ . When  $s = 18$ ,  $t = 72$ . Find  $t$  when  $s = 25$ .

29.  $m$  is inversely proportional to  $n$ . When  $n = 12$ ,  $m = 15$ . Find  $m$  when  $n = 18$ .

## Section F: Number Operations

30. Calculate:

- (a)  $7.8 + 6.49$
- (b)  $11.4 - 7.86$
- (c)  $8.5 \times 6.7$
- (d)  $14.4 \div 2.4$

31. Work out:

- (a)  $6\frac{3}{8} + 5\frac{1}{12}$
- (b)  $8\frac{1}{15} - 5\frac{2}{3}$
- (c)  $4\frac{1}{5} \times 2\frac{1}{7}$

32. A jeweller sells earrings at 7.60 per pair. How much do 4.5 pairs of earrings cost?

33. Find  $\frac{9}{11}$  of 77.

34. What is 75% of 2.6 hours in minutes?

35. Calculate the value of  $\frac{9.6 \times 35}{2.8}$ .

## Section G: Standard Form

36. Write these numbers in standard form:

- (a) 9400
- (b) 0.0026
- (c) 840,000
- (d) 0.000057

37. Write these numbers in ordinary form:

- (a)  $5.8 \times 10^5$
- (b)  $6.3 \times 10^{-2}$
- (c)  $4.17 \times 10^4$
- (d)  $8.6 \times 10^{-7}$

38. Calculate, giving your answer in standard form:

- (a)  $(7 \times 10^6) \times (2 \times 10^3)$
- (b)  $(3.6 \times 10^8) \div (9 \times 10^5)$
- (c)  $(6 \times 10^{-4}) + (7 \times 10^{-4})$

39. The population of a city is  $4.2 \times 10^6$  people. If each person uses an average of  $1.5 \times 10^2$  litres of water per day, how much water does the city use per day? Give your answer in standard form.

## Section H: Problem Solving

- 40. A delivery service costs £22 per month plus 11p per delivery. In one month, Rachel makes 65 deliveries. What is her total delivery cost?
- 41. A rectangular swimming pool is 42 metres long and 24 metres wide. The owner wants to increase both dimensions by 20%. What will be the new area of the swimming pool?
- 42. In an end-of-season sale, all prices are reduced by 50%. A dining table originally costs £720. After the sale, there is a further 4% reduction for cash payment. What is the final price of the dining table?
- 43. A printer ink cartridge holds 45ml when full. If  $\frac{8}{9}$  of the cartridge is full, how many ml need to be added to fill it completely?
- 44. The ratio of the ages of two sisters is 5:3. If the older sister is 35 years old, how old is the younger sister?
- 45. A helicopter travels 420 km in 2.8 hours. At this rate, how far will it travel in 4.2 hours?
- 46. £2400 is invested at 3.5% simple interest per year. How much interest is earned after 15 months?
- 47. A recipe serves 24 people and uses 1680g of beef. How much beef is needed to serve 18 people?

**Answer Space**

Use this space for your working and answers.

**END OF TEST**

Total marks: 100

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[stepupmaths.co.uk](http://stepupmaths.co.uk)**