

Foundation GCSE: Non-Calculator Arithmetic

Name: _____

Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (20). Working out should be shown where appropriate.

1. Calculate: $9 + 6$
2. Calculate: $17 - 8$
3. Calculate: 7×5
4. Calculate: $48 \div 6$
5. Calculate: $47 + 39$
6. Calculate: $83 - 46$
7. Calculate: 16×7
8. Calculate: $108 \div 9$
9. Work out the value of 4^3
10. Find the square root of 225
11. Calculate: $5 + 3 \times 7$
12. Calculate: $(7 + 3) \times 8$
13. Work out: $30 + 15 \div 3 - 4$
14. A theater hall has 28 rows of seats, with each row containing 18 seats. How many seats are there in total?
15. A gardener is planting bulbs. He buys a bag of 315 tulip bulbs and plants them equally into 15 separate flower beds. How many bulbs go into each bed?
16. Estimate the value of $\frac{39.2 \times 4.1}{1.9^2}$ by rounding each number to 1 significant figure
17. Work out: $4 \times (3 + 2)^2 - 18 \div 3$
18. A restaurant buys 45 kg of potatoes at £1.40 per kg and 20 kg of carrots at £0.90 per kg. What is the total cost of the vegetables?
19. A hotel parking lot has 12 rows. Each row can park 45 cars. If 75% of the total parking spaces are currently occupied, how many empty spaces are left?
20. A community center receives a delivery of 144 folding chairs. They arrange them into 12 equal rows, and then distribute the chairs equally among 4 different local clubs. How many chairs does each club receive?

Answers & Worked Solutions

1. 15

$$9 + 6 = 15.$$

2. 9

$$17 - 8 = 9.$$

3. 35

$$7 \times 5 = 35.$$

4. 8

$$48 \div 6 = 8.$$

5. 86

Add units ($7 + 9 = 16$), add tens ($40 + 30 = 70$), total 86.

6. 37

$$\begin{array}{r} 7 \\ 8 \overline{)13} \\ -4 \\ \hline 3 7 \end{array}$$

7. 112

Partition: $10 \times 7 = 70$ and $6 \times 7 = 42$;
 $70 + 42 = 112$.

8. 12

Division: $108 \div 9 = 12$ (since $12 \times 9 = 108$).

9. 64

Cube calculation: $4 \times 4 \times 4 = 16 \times 4 = 64$.

10. 15

Since $15^2 = 225$, the square root is 15.

11. 26

BODMAS: Multiply first ($3 \times 7 = 21$), then add 5.

12. 80

BODMAS: Brackets first ($7 + 3 = 10$), then multiply by 8.

13. 31

BODMAS: Divide first ($15 \div 3 = 5$), then $30 + 5 - 4 = 31$.

14. 504

Multiply rows by seats per row: $28 \times 18 = 504$ seats.

15. 21

Divide total bulbs by beds: $315 \div 15 = 21$ bulbs per bed.

16. 40

Round each number to 1 sf and evaluate:
 $\frac{40 \times 4}{2^2} = \frac{160}{4} = 40$.

17. 94

Brackets & indices: $4 \times 5^2 - 6 = 4 \times 25 - 6 = 100 - 6 = 94$.

18. £81

Potatoes: $45 \times 1.40 = 63$. Carrots: $20 \times 0.90 = 18$. Total = £63 + £18 = £81.

19. 135

Total spaces = $12 \times 45 = 540$. Occupied = $0.75 \times 540 = 405$. Empty = $540 - 405 = 135$.

20. 3

Chairs per row = $144 \div 12 = 12$. Divided by 4 clubs: $12 \div 4 = 3$ chairs each.