

Foundation GCSE: Order of Operations (BODMAS)

Name: _____

Class: _____

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

1. Calculate: $3 + 4 \times 2$

12. Calculate: $30 \div (3 + 2) + 4$

2. Calculate: $(3 + 4) \times 2$

13. Insert brackets to make this correct: $3 + 5 \times 2 = 16$

3. Calculate: $15 - 3 \times 4$

14. Calculate: $4^2 - 8 \div 2 + 1$

4. Calculate: $20 \div 4 + 1$

15. Calculate: $\frac{15 + 9}{3} - 2$

5. Calculate: $24 \div (2 + 4)$

6. Calculate: $10 - 2 + 5$

16. Calculate: $5 + 2 \times (10 - 3^2)$

7. Calculate: $12 \div 3 \times 2$

17. Insert brackets to make this correct: $2 \times 3 + 4 - 1 = 13$

8. Calculate: $5^2 + 3$

18. Calculate: $\frac{6^2 - 4}{2 \times 4} + 3$

9. Calculate: 2×3^2

10. Calculate: $(2 \times 3)^2$

19. Insert brackets to make this correct: $12 - 2 \times 3 + 1 = 7$

11. Calculate: $18 - 3 \times (5 - 2)$

20. Calculate: $3 \times [4 + 2 \times (5 - 3)] - 10$

Answers & Worked Solutions

1. 11
Multiply first: $4 \times 2 = 8$, then $3 + 8 = 11$.
2. 14
Brackets first: $3 + 4 = 7$, then $7 \times 2 = 14$.
3. 3
Multiply first: $3 \times 4 = 12$, then $15 - 12 = 3$.
4. 6
Divide first: $20 \div 4 = 5$, then $5 + 1 = 6$.
5. 4
Brackets first: $2 + 4 = 6$, then $24 \div 6 = 4$.
6. 13
Work left to right for addition/subtraction: $10 - 2 = 8$, then $8 + 5 = 13$.
7. 8
Work left to right for multiplication/division: $12 \div 3 = 4$, then $4 \times 2 = 8$.
8. 28
Indices first: $5^2 = 25$, then $25 + 3 = 28$.
9. 18
Indices first: $3^2 = 9$, then $2 \times 9 = 18$.
10. 36
Brackets first: $2 \times 3 = 6$, then $6^2 = 36$.
11. 9
Brackets first ($5 - 2 = 3$), then multiply ($3 \times 3 = 9$), then subtract ($18 - 9 = 9$).
12. 10
Brackets first ($3 + 2 = 5$), then divide ($30 \div 5 = 6$), then add ($6 + 4 = 10$).
13. $(3 + 5) \times 2 = 16$
Brackets force the addition to happen before multiplication.
14. 13
Indices first (16), then divide ($8 \div 2 = 4$), then $16 - 4 + 1 = 13$.
15. 6
Numerator first ($15 + 9 = 24$), divide by 3 (8), then subtract 2.
16. 7
Inner brackets/indices first ($3^2 = 9$), then brackets ($10 - 9 = 1$), multiply ($2 \times 1 = 2$), add 5.
17. $2 \times (3 + 4) - 1 = 13$
Brackets make $3 + 4 = 7$, multiplied by 2 is 14, minus 1 is 13.
18. 7
Numerator ($36 - 4 = 32$), denominator (8), $32 \div 8 = 4$, plus 3 = 7.
19. $12 - 2 \times 3 + 1 = 7$! So don't have to insert brackets but could have $12 - (2 \times 3) + 1 = 7$.
20. 14
Innermost brackets ($5 - 3 = 2$), multiply by 2 (4), add 4 (8), multiply by 3 (24), subtract 10 (14).