

WA4MNAOO1

Calculating with number

Core + Challenge

Order of Operations — With Brackets

I can use the order of operations to work out expressions that include brackets.

Name: _____ Date: _____ Score: / 53

Key idea

Order of operations (with brackets): brackets are calculated first, before any multiplication, division, addition or subtraction.

E.g. $(6 + 3) \times 2$: brackets first ($6+3=9$), then multiply ($9 \times 2=18$).

A Fluency *practise the skill*

/16 marks

Work out the answer, calculating the brackets first.

1. $(6 + 3) \times 2$ _____

2. $(10 - 4) \times 3$ _____

3. $2 \times (5 + 3)$ _____

4. $(20 - 8) \div 4$ _____

5. $(4 + 6) \times 2$ _____

6. $5 \times (9 - 4)$ _____

7. $(15 + 5) \div 4$ _____

8. $(12 - 7) \times 3$ _____

9. $3 \times (8 - 2)$ _____

10. $(18 \div 2) + 5$ _____

11. $(7 + 5) \times 2$ _____

12. $6 \times (10 - 6)$ _____

13. $(24 - 9) \div 3$ _____

14. $4 \times (3 + 5)$ _____

15. $(16 + 4) \div 5$ _____

16. $(9 - 3) \times 4$ _____

B Core *apply the skill to problems*

/21 marks

- 1 A box holds $(4 + 3)$ rows of chocolates with 2 chocolates per row. Write an expression and calculate the total: $(4 + 3) \times 2$.

[3 marks]

Answer: _____

- 2 Four friends share the cost of a \$40 gift plus a \$8 card equally. (a) Write an expression for the cost per person. (b) Calculate the cost per person.

[4 marks]

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Answer: _____

3

A gardener plants $(6 - 2)$ rows of 5 seedlings each. Write an expression and calculate the total number of seedlings: $(6 - 2) \times 5$.

[3 marks]

Answer: _____

4

A caterer has 60 sandwiches, divided equally among $(3 + 2)$ tables. (a) Write an expression for the sandwiches per table. (b) Calculate the number per table.

[4 marks]

Answer: _____

5

A shop has 3 shelves, each holding $(8 - 3)$ boxes. Write an expression and calculate the total number of boxes: $3 \times (8 - 3)$.

[3 marks]

Answer: _____

6

A charity splits a \$90 donation plus a \$30 grant equally among $(2 + 1)$ schools. (a) Write an expression for the amount each school gets. (b) Calculate the amount.

[4 marks]

Answer: _____

C

Reasoning *explain, justify and check*

/9 marks

1

Explain why brackets are calculated first, using $(6 + 3) \times 2$ as an example.

[2 marks]

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2

A student calculates $(10 - 4) \times 3$ by multiplying first: $4 \times 3 = 12$, then $10 - 12 = -2$. Explain the student's error and give the correct answer.

[2 marks]

3

Explain the difference between $2 \times (5 + 3)$ and $2 \times 5 + 3$, and calculate both.

[2 marks]

4

A student says that brackets are only needed when there is division in the expression. Explain why this is incorrect, using an example with addition and multiplication.

[3 marks]

D

Challenge *multi-step and problem-solving*

/7 marks

1

Insert brackets to make this equation true: $2 + 3 \times 4 = 20$.

[2 marks]

Answer: _____

2

Using the numbers 2, 3 and 4 once each with + and $\times$, and brackets, write an expression that equals 14.

[2 marks]

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Answer: _____

3

An expression of the form $(a + b) \times c = 24$ uses whole numbers for a , b and c , with c greater than 1. Find one possible set of values.

[3 marks]

Answer: _____

How did I go?

Fluency ___/16 Core ___/21 Reasoning ___/9 Challenge ___/7 **Total ___/53**

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