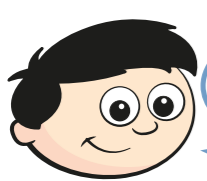# Calculate using the order of operations
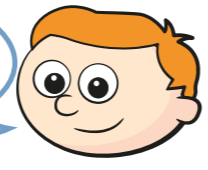
1 Dexter and Ron are completing the same calculation.

Dexter: $6 + 4 \times 2 = 20$

Ron: $6 + 4 \times 2 = 14$
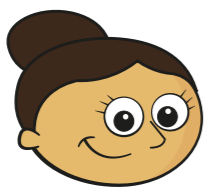
Who is correct? _____

Explain your answer.

_____

_____

2

Dora: $8 - 3 + 4 = 8 - 7 = 1$

Do you agree with Dora? _____

Explain your answer.

_____

_____

3 Calculate these expressions without using a calculator.

Show how you used the order of operations. The first one has been done for you.

a) $6 + 8 \times 3 = $ _6 + 24 = 30_____

b) $30 - 24 \div 2 = $ _____ = _____

c) $50 + 36 \div 4 = $ _____ = _____

d) $23 \times 2 - 1 = $ _____ = _____

e) $60 \div 4 - 2 = $ _____ = _____

f) $4 - 12 \div 3 = $ _____ = _____

4 Is the statement true or false?

Both calculations give the same answer.

$$7 \times 3 + 5 \qquad\qquad 7 \times (3 + 5)$$

Explain your answer.

_____

_____

_____

5 Work out the values of the expressions.

Show each step in your calculation.

a) $15 + 3 \times 2^2$

c) $3^3 - 21 \div 7$

b) $31 - 3^2 \times 2$

d) $45 + 2^3 \div 4$

6 Evaluate the expressions, showing each step in your calculation.

a) $150 - 3 \times 5^2 + 11$

c) $150 - 3 \times (5^2 + 11)$

b) $150 - (3 \times 5^2 + 11)$

7 Aisha goes shopping with £20

She spends £4 on a book and buys 5 magazines each costing £3

Tick the calculations that show how much money she has left in pounds.

| $20 - 4 + 5 \times 3$ | $20 - (4 + 5) \times 3$ | $20 - (4 + 5 \times 3)$ |
| $20 - 4 - 5 \times 3$ | $20 - 5 \times 3 + 4$ | $20 - (5 \times 3 + 4)$ |

8 Calculate the values of the expressions.

$12 + 8 \div 4$

$(12 + 8) \div 4$

$(12 + 4) \div 8$

$12 + 4 \div 8$

9 Add brackets to make each statement correct.

You may need more than one set of brackets for some statements.

a) $3 + 4 \times 5 + 6 = 29$ $3 + 4 \times 5 + 6 = 41$

$3 + 4 \times 5 + 6 = 47$ $3 + 4 \times 5 + 6 = 77$

b) $1 - 2 + 3 \times 4 = 8$ $1 - 2 + 3 \times 4 = -13$

10 Write >, < or = to complete the statements.

Show workings to justify your answers.

a) $3 + 4 \div 5 \bigcirc (3 + 4) \div 5$

b) $-3 - 2 \times 4 \bigcirc 3 - (2 \times -4)$

c) $\frac{1}{2} + \frac{1}{3} \times \frac{1}{4} \bigcirc \left(\frac{1}{2} - \frac{1}{3}\right) \times \frac{1}{4}$