



1 Work out $3 + 4 \times 5$

(1 mark)

The order of operations is a shared convention so everyone reads the same expression the same way. Do brackets, then powers, then multiplication/division from left to right, then addition/subtraction from left to right

Multiplication comes before addition

$$4 \times 5 = 20$$

$$3 + 20 = 23$$

23

2 Work out $20 - 12 \div 4$

(1 mark)

Division comes before subtraction

$$12 \div 4 = 3$$

$$20 - 3 = 17$$

17

3 Work out $(9 - 4) \times 6$

(1 mark)

Work out the brackets first

$$9 - 4 = 5$$

$$5 \times 6 = 30$$

30

4 Work out $(9 - 4)^2 + 6$

(2 marks)

Brackets

$$(9 - 4)^2 + 6 = 5^2 + 6$$

Indices

$$= 25 + 6$$

31

- 5 Put one of the signs +, -, × or ÷ in each box to make the statement correct.

$$8 \square 6 \square 2 = 5$$

(2 marks)

Try $8 - 6 \div 2$

Divide first

$$6 \div 2 = 3$$

$$8 - 3 = 5$$

$$8 - 6 \div 2 = 5$$

- 6 Work out $18 \div (2 + 4)$

(1 mark)

Work out the brackets first

$$2 + 4 = 6$$

$$18 \div 6 = 3$$

$$3$$

- 7 Work out $3 \times 5^2 - 10$

(2 marks)

Indices first

$$5^2 = 25$$

Then multiply

$$3 \times 25 = 75$$

$$75 - 10 = 65$$

$$65$$

- 8 Dan works out $5 + 2 \times 6$ and gets the answer 42.

- Explain the mistake Dan has made.
- Work out the correct answer.

(2 marks)

a)

Dan did $5 + 2$ first

Multiplication comes before addition

b)

$$2 \times 6 = 12$$

$$5 + 12 = 17$$

$$17$$

9 Work out 5×2^2

(1 mark)

A power tells you to multiply a number by itself: 2^2 means 2×2 . Work out powers before multiplication

$$2^2 = 4$$

$$5 \times 4 = 20$$

20

10 Work out $\frac{16 - 4}{2 \times 3}$

(1 mark)

Work out the top of the fraction

$$16 - 4 = 12$$

Work out the bottom of the fraction

$$2 \times 3 = 6$$

$$12 \div 6 = 2$$

2

11 Tom works out $2 + 3 \times 4$

Tom's answer is 20

Tom's answer is wrong.

Explain what Tom has done wrong.

(1 mark)

Tom worked out $2 + 3 = 5$ first, then $5 \times 4 = 20$

Multiplication must be done before addition

The correct answer is $2 + 12 = 14$

12 Sam works out $24 \div 4 \times 2$

Sam's answer is 3

Sam's answer is wrong.

Explain what Sam has done wrong.

(1 mark)

Sam worked out $4 \times 2 = 8$ first, then $24 \div 8 = 3$

Division and multiplication have equal priority, so work from left to right

$$24 \div 4 = 6, \text{ then } 6 \times 2 = 12$$

13 Work out $3^2 + 4 \times (7 - 2)$

(2 marks)

Brackets first

$$7 - 2 = 5$$

Indices next

$$3^2 = 9$$

Multiplication

$$4 \times 5 = 20$$

Addition

$$9 + 20 = 29$$

29

14 a. Work out $8 + 12 \div 4$

b. Put a pair of brackets in this statement to make it true.

$$8 + 12 \div 4 = 5$$

c. Put a pair of brackets in this statement to make it true.

$$2 + 3 \times 4 - 1 = 19$$

(3 marks)

a) Division first

$$12 \div 4 = 3, \text{ then } 8 + 3 = 11$$

$$b) (8 + 12) \div 4 = 20 \div 4 = 5$$

$$c) (2 + 3) \times 4 - 1 = 5 \times 4 - 1 = 20 - 1 = 19$$