

8300

GCSE MATHEMATICS

Foundation tier – Questions by Topic

Number

Using the correct order of operations

v1.0

Name _____

Materials

For this paper you must have:

- Mathematical instruments

Information

- The marks for questions are shown in brackets

Advice

- In all calculations, show clearly how you work out your answer

For questions 1 to 12 you must **NOT** use a calculator.



Q1.

Work out $12^2 \div \left(\frac{1}{3} \times \sqrt{36}\right)$

(Total 3 marks)

Q2.

Work out $\sqrt{100 - 4(2^2 + 5)}$

(Total 3 marks)

Q3.

Simplify $a + 3a \div a$

(Total 1 mark)

Q4.

Here are two calculations, A and B.

A	$8 \times 3 + 2$
B	$21 - (15 - 4)$

Work out answer to A $\times$ answer to B

(Total 3 marks)

Q5.

Work out $60 \div 2 + 4$

(Total 2 marks)

Q6.

Work out $46 - 2.5 \times 4$

(Total 2 marks)

Q7.

Work out $(43 \times 8) - (234 \div 6)$

(Total 3 marks)

Q8.

This formula converts temperature in degrees Fahrenheit (F) to kelvin (K)

$$K = \frac{5}{9}(F - 32) + 273$$

A pottery oven is heated to 2192 degrees Fahrenheit.
Work out this temperature in kelvin.

(Total 3 marks)

Q9.

Work out $\sqrt{121} - (13 - 5 \times 2)^2$

(Total 3 marks)

Q10.

Work out $4 + 3 \times 5 - 1$

Circle your answer.

16

18

28

34

(Total 1 mark)

Q11.

$$2 + 0 + 1 + 7 = 10$$

Make the following calculations correct.

Use only the symbols $+$, $-$, $\times$, $\div$ and $()$

$$\begin{array}{ccccccccc} 2 & 0 & 1 & 7 & = & -4 \\ 2 & 0 & 1 & 7 & = & 0 \\ 2 & 0 & 1 & 7 & = & 2^4 \end{array}$$

(Total 3 marks)

Q12.

In this question you may **only** use the signs $+$ and $\times$

Put signs into each calculation so that the answer is a multiple of 5

Show three different ways of doing this.

Give the answer for each calculation.

$$1 \square 2 \square 3 \square 4 = \square$$

$$1 \square 2 \square 3 \square 4 = \square$$

$$1 \square 2 \square 3 \square 4 = \square$$

(Total 3 marks)

For the rest of the questions, you may use a calculator.



Q13.

Sofia is revising for Maths.

She tries to work out $3 \times (4 + 2)$

Here is her working.

$$\begin{array}{l} 3 \times (4 + 2) = 12 + 3 \\ = 15 \end{array}$$

What mistake has she made?

(Total 1 mark)

Q14.

Match each expression on the left with one on the right.

One has been done for you.

$a + 3 + 2$	$a + 6$
$a + 3 \times 2$	$a + 5$
$a \times 3 \times 2$	$3a + 6$
$a \times 3 + 2$	$6a$
	$3a + 2$

(Total 3 marks)

Q15.

Here are two calculations.

$$\begin{array}{rcl} 4 + 4 - 4 - 4 & = & 0 \\ (4 + 4) \div (4 + 4) & = & 1 \end{array}$$

Use brackets and the signs $+$, $-$, $\times$ and $\div$ to make the following calculations true.

$$\begin{array}{rcl} 4 & 4 & 4 & 4 & = & 2 \\ 4 & 4 & 4 & 4 & = & 3 \end{array}$$

(Total 2 marks)

Q16.

Here are five number cards.



- (a) Use **three** of the cards to complete the following.

$$\square + \square \times \square = 9$$

(1)

- (b) Use **four** of the cards to complete the following.
Card 3 has already been placed to help you.

$$\square \times 3 - \square \times \square = 7$$

(2)

- (c) Use all five cards to complete the following.

$$\square + \square + \square = \square \square$$

(2)

(Total 5 marks)