

Topic Check In - 1.03 Combining arithmetic operations

Calculate the following, showing all your working.

- $(3 + 6) \times (9 - 2)$
- $3 + 6 \times 9 - 2$
- $6 - 8 \div 2$
- $\sqrt{3^2 + 4^2}$
- $((3 + \sqrt{4}) \times 2)^2$
- Zosia says “ $6 + 5 \times 2$ is equal to 22.”
Explain why Zosia is incorrect.
- Explain why $(4 - 2) \div (6 - 3)$ could be written as $\frac{2}{3}$.
- If the reciprocal of 5 is $\frac{1}{5}$ and the reciprocal of $\frac{1}{3}$ is 3, explain how you could find the reciprocal of $\frac{1}{2}$.
- John makes party bags containing 1 ball, 2 sweets and 1 card. If each ball costs 50p, each sweet costs 5p and each card costs 15p, how much change will he have from £10 if he makes up 8 bags?
- Arrange the following in order from smallest to largest.

$$\frac{4+2}{1+3} \quad \frac{(3+1)^2}{4} \quad \frac{3+1}{4 \times 2} \quad \frac{(3-4)^2}{1}$$

Extension

Use four 4s and any mathematical operations to make the totals 1, 2, 3, 4 etc.

$$\begin{aligned} 4 & 4 & 4 & 4 & = & 1 \\ 4 & 4 & 4 & 4 & = & 2 \\ 4 & 4 & 4 & 4 & = & 3 \\ 4 & 4 & 4 & 4 & = & 4 \end{aligned}$$



GCSE (9-1) MATHEMATICS

Answers

- 63
- 55
- 2
- 5
- 100
- Because she should multiply 5 by 2 first.
- Because after doing the subtractions you are left with $2 \div 3$, and a division can be written as a fraction.
- By swapping the numerator and denominator of the fraction e.g. $\frac{2}{1}$.
- £4.00
- $\frac{3+1}{4 \times 2}$ $\frac{(3-4)^2}{1}$ $\frac{4+2}{1+3}$ $\frac{(3+1)^2}{4}$

Extension

Possible solutions:

$$(4 + 4) \div (4 + 4) = 1$$

$$4 + (4 - 4) \div 4 = 4$$

$$4 + 4 - 4 \div 4 = 7$$

$$4 \div 4 + 4 \div 4 = 2$$

$$(4 \times 4 + 4) \div 4 = 5$$

$$4 \times 4 \div 4 + 4 = 8$$

$$(4 + 4 + 4) \div 4 = 3$$

$$4 + (4 + 4) \div 4 = 6$$

$$4 + 4 + 4 \div 4 = 9$$



We'd like to know your view on the resources we produce. By clicking on the 'Like' or 'Dislike' button you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click 'Send'. Thank you.

OCR Resources: *the small print*

OCR's resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources. We update our resources on a regular basis, so please check the OCR website to ensure you have the most up to date version.

© OCR 2015 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content: Maths and English icons: AirOne/Shutterstock.com



Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Solve inside the brackets before doing multiplication			
AO1	2	Multiplication before addition or subtraction			
AO1	3	Use BIDMAS			
AO1	4	Recognise that the expression under the square root symbol should be treated as being inside brackets			
AO1	5	Work out a set of brackets within a set of brackets			
AO2	6	Apply fact that multiplication comes before addition			
AO2	7	Apply BIDMAS to solve a problem			
AO2	8	Find reciprocals			
AO3	9	Solve a word problem by using correct order of operations			
AO3	10	Use fraction line as a division of implied bracketed terms			

Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Solve inside the brackets before doing multiplication			
AO1	2	Multiplication before addition or subtraction			
AO1	3	Use BIDMAS			
AO1	4	Recognise that the expression under the square root symbol should be treated as being inside brackets			
AO1	5	Work out a set of brackets within a set of brackets			
AO2	6	Apply fact that multiplication comes before addition			
AO2	7	Apply BIDMAS to solve a problem			
AO2	8	Find reciprocals			
AO3	9	Solve a word problem by using correct order of operations			
AO3	10	Use fraction line as a division of implied bracketed terms			

Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Solve inside the brackets before doing multiplication			
AO1	2	Multiplication before addition or subtraction			
AO1	3	Use BIDMAS			
AO1	4	Recognise that the expression under the square root symbol should be treated as being inside brackets			
AO1	5	Work out a set of brackets within a set of brackets			
AO2	6	Apply fact that multiplication comes before addition			
AO2	7	Apply BIDMAS to solve a problem			
AO2	8	Find reciprocals			
AO3	9	Solve a word problem by using correct order of operations			
AO3	10	Use fraction line as a division of implied bracketed terms			

Assessment Objective	Qu.	Topic	R	A	G
AO1	1	Solve inside the brackets before doing multiplication			
AO1	2	Multiplication before addition or subtraction			
AO1	3	Use BIDMAS			
AO1	4	Recognise that the expression under the square root symbol should be treated as being inside brackets			
AO1	5	Work out a set of brackets within a set of brackets			
AO2	6	Apply fact that multiplication comes before addition			
AO2	7	Apply BIDMAS to solve a problem			
AO2	8	Find reciprocals			
AO3	9	Solve a word problem by using correct order of operations			
AO3	10	Use fraction line as a division of implied bracketed terms			

