BIDMAS

Study Development Worksheet

## Questions

Calculate the following:

1. 2 + 3 x 4
2. 30 $÷$ 5 + 4
3. 2 x (3 - 1)
4. 100 $÷$ (8 + 2)
5. $\frac{3 + 12}{5}$
6. 43- 2 x 8 + 5
7. $\frac{5(350-32)}{9}$
8. 20 – 2 x 32

## Answers

1. Using BIDMAS, we know that multiplication comes before addition, so the calculation is performed as follows:

2 + 3 x 4 = 2 + 12 = 14

1. Division comes before addition, so:

30 $÷$ 5 + 4 = 6 + 4 = 10

1. Even though subtraction comes after multiplication in BIDMAS, the subtraction component is inside a bracket, so it comes first:

2 x (3 – 1) = 2 x (2) = 4

1. 100 $÷$ (8 + 2) = 100 $÷$ 10 = 10
2. Even though a fraction is a type of division, fractions are a sort of exception/special case of BIDMAS, where the division is the final thing you do with the fraction. Imagine that the top and bottom are both in brackets:

$\frac{3 + 12}{5}$ = $\frac{(3 + 12)}{(5)}$ = $\frac{15}{5}$ = 3

1. We apply the index first: 43- 2 x 8 + 5 = 64 – 2 x 8 + 5
Next is multiplication: 64 – (2 x 8) + 5 = 64 – 16 + 5

Then, addition: -16 + 5 = -11, so 64 -16 + 5 = 64 - 11

Finally, the subtraction: 64 – 11 = 53

1. Brackets first: $\frac{5(350-32)}{9}$ = $\frac{5(318)}{9}$

Then, the multiplication: $\frac{5(318)}{9}$ = $\frac{1590}{9}$

**Note:** writing a number next to another number inside a bracket means you need to multiply them. E.g. 3(2) = 3 x 2 = 6

Finally, the fraction divide: $\frac{1590}{9}$ = 176.67

**Bonus fact:** This question actually uses the equation that turns a temperature in Fahrenheit into a temperature in Celsius:

$\frac{5(temperature in °F - 32)}{9}$ = temperature in $°$C

So, in this example, 350$°$F is turned into 176.67$°$C.

1. First, the index: 20 – 2 x 32 = 20 – 2 x 9

Then, the multiplication: 20 – 2 x 9 = 20 – 18

Finally, the subtraction: 20 – 18 = 2

**Support**: Study Development offers workshops, short courses, 1 to 1 and small group tutorials.

* Book a tutorial or join a workshop on the [Study Development tutorial and workshop webpage](https://www.yorksj.ac.uk/students/study-skills/study-development-tutorials/) or search ‘YSJ study development tutorials.’
* Access our Study Success resources on the [Study Success webpage](https://www.yorksj.ac.uk/students/study-skills/study-success/) or search ‘YSJ study success.’