



Questions

Calculate the following:

1. $2 + 3 \times 4$

2. $30 \div 5 + 4$

3. $2 \times (3 - 1)$

4. $100 \div (8 + 2)$

5. $\frac{3 + 12}{5}$

6. $4^3 - 2 \times 8 + 5$

7. $\frac{5(350-32)}{9}$

8. $20 - 2 \times 3^2$



Answers

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

$$2 + 3 \times 4 = 2 + 12 = 14$$

2. Division comes before addition, so:

$$30 \div 5 + 4 = 6 + 4 = 10$$

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

$$2 \times (3 - 1) = 2 \times (2) = 4$$

4. $100 \div (8 + 2) = 100 \div 10 = 10$

5. 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:

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

6. We apply the index first: $4^3 - 2 \times 8 + 5 = 64 - 2 \times 8 + 5$

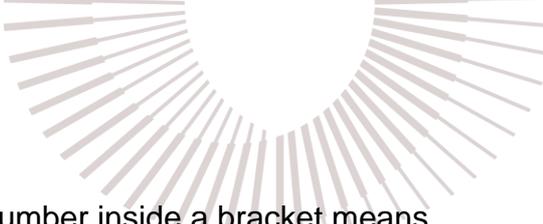
Next is multiplication: $64 - (2 \times 8) + 5 = 64 - 16 + 5$

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

Finally, the subtraction: $64 - 11 = 53$

7. 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. $3(2) = 3 \times 2 = 6$

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:

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

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

8. First, the index: $20 - 2 \times 3^2 = 20 - 2 \times 9$

Then, the multiplication: $20 - 2 \times 9 = 20 - 18$

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](#) or search 'YSJ study development tutorials.'
- Access our Study Success resources on the [Study Success webpage](#) or search 'YSJ study success.'