BIDMAS

Study Development Worksheet

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 x 4 = 2 + 12 = 14

2. Division comes before addition, so:

   30 ÷ 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 x (3 – 1) = 2 x (2) = 4

4. 100 ÷ (8 + 2) = 100 ÷ 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 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

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 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:

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

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: $20 – 18 = 2$

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