Order of Operations

You need: a classmate

Operations work in this order:

- brackets first

then • multiplication or division

then • addition or subtraction.

Otherwise, work from left to right.

1. **a.** Josh's teacher put the following equations on the board:

    i. 16 ☐ 4 ☐ 3 = 4   **ii.** 16 ☐ 4 ☐ 3 = 28

    iii. 16 ☐ 4 ☐ 3 = 12   **iv.** 16 ☐ 4 ☐ 3 = 17

    Copy the equations out and put an operation sign (+, −, x, or ÷) in each box to make the equations true. You may need to use brackets.

    b. Now write out the statement **16 ☐ 4 ☐ 3** six times and put an operation sign in each box so that the results are 1, 9, 61, 7, 67, and 15.

2. Josh's teacher then put another equation on the board:

    $$16 + 8 \div 4 - 2 \times 3 = \boxed{}$$

    Josh said:

    "Depending on where I put brackets,
    I can get 0, 12, 28, or 48 as the result."

    a. Write out the equation above four times.
    Use brackets where necessary to make
    each of Josh's four results true.
    (You can get one of the solutions without
    using any brackets.)

    b. Use brackets to make other true equations.

    c. Find another way to get 12 as the result.

3. **a.** Using any four different digits from 0 to 9, the four
    operation signs +, −, x, or ÷, and brackets
    where necessary, make all the numbers from 1 to 10.
    For example, $4 = 4 - 2 + (6 \div 3)$.

    b. Try making the numbers from 11 to 20.
    Compare your equations with a classmate's.