

Four Number Expressions

The idea of this problem was to use a digit exactly 4 times, along with arithmetic operations, to create expressions with different numerical values. Such expressions are called **Four Number Expressions**. For instance, $4 + (4 + 4) \cdot 4$ is a **Four Number Expressions** for the number 36.

The Task

Create as many **Four Number Expressions** as you can for each of the numbers from 0 to 25, using the rules outlined here.

The Rules

The rules for **Four Number Expressions**:

- Your teacher will assign your group a digit for the **Four Number Expressions**.
- You must use your digit exactly four times.

The digits can be combined using any of these methods.

- You may use any of the four basic arithmetic operations—addition, subtraction, multiplication, and division (according to the order-of-operations rules).
- You may use exponents.
- You may use radicals or factorials.
- You may put two or more digits together to form a number such as 11.
- You may use parentheses and brackets to change the meaning of the expression.

Each member is responsible for making a list of their own **Four Number Expressions** and the group is also responsible for a poster with all **Four Number Expressions** that the group has together.