

Factors

A **factor** of an integer divides that integer exactly with **no remainder**.

Whole number

 **Example**

3 is a factor of 18 because $18 \div 3 = 6$

The result of this division is an integer, so 3 and 6 are factors of 18

4 is **not** a factor of 18 because $18 \div 4 = 4.5$

The result of this division is **not** an integer, so 4 is **not** a factor of 18

To find all of the factors of an integer, we write out all of the **factor pairs** in order.

 **Example**

Find all of the factors of 24

1 Begin with 1 and the number itself. Every integer will have a pair of factors like this (1 and the number itself).

$$1 \times 24$$

2 Work in order. 2 is a factor because $24 \div 2 = 12$. This divides exactly so 2 and 12 are factors of 24

$$2 \times 12$$

3 Keep working in order - we check 3 and 4. They are both factors of 24, so we write down those factor pairs.

$$3 \times 8$$

$$4 \times 6$$

4 5 is not a factor of 24 because $24 \div 5 = 4.8$ (not an integer)

5 The next number we would check is 6, but we already have 6 in the list, so we have found all of the factors.

The factors of 24 are:

1, 2, 3, 4, 6, 8, 12, 24