

**Multiplication of Integers**

Multiplication of two integers is the repeated addition.

**Example**

* 3 × (-2) = three times (-2) = (-2) + (-2) + (-2) = – 6
* 3 × 2 =  three times 2 = 2 + 2 + 2 = 6



Now let’s see how to do the multiplication of integers without the number line.

**1. Multiplication of a Positive Integer and a Negative Integer**

To multiply a positive integer with a negative integer, we can multiply them as a whole number and then put the negative sign before their product.

So the product of a negative and a positive integer will always be a negative integer.

**For two integers p and q,**

**p × (-q) = (-p) × q = - (p × q) = - pq**

**Example**

4 × (-10) = (- 4) × 10 = - (4 × 10) = - 40



**2. Multiplication of Two Negative Integers**

To multiply two negative integers, we can multiply them as a whole number and then put the positive sign before their product.

Hence, if we multiply two negative integers then the result will always be a positive integer.

**For two integers p and q,**

**(-p) × (-q) = (-p) × (-q) = p × q**

**Example**

(-10) × (-3) = 30

**3. The Product of Three or More Negative Integers**

It depends upon the number of negative integers.

a. If we multiply two negative integers then their product will be positive integer

(-3) × (-7) = 21

b. If we multiply three negative integers then their product will be negative integer

(-3) × (-7) × (-10) = -210

If we multiply four negative integers then their product will be positive integer

(-3) × (-7) × (-10) × (-2) = 420

Hence, if the number of negative integers is **even** then the result will be **a positive integer** and if the number of negative integers is **odd** then the result will be a **negative integer**.

**Rules for multiplication and division of integers**

