Multiplying by Powers of 10

Multiplying/Trailing Zeros

Multiplying by a power of 10 with trailing zeros moves the decimal to the right.
The number of times the decimal is moved depends on the number of trailing zeros.

Example:

3 trailing zeros

$$9.3 \cdot 1{,}000 \rightarrow 9.300. \rightarrow 9{,}300.$$

1   2   3

3 movements right

Multiplying/Leading Zeros

Multiplying by a power of 10 with leading zeros moves the decimal to the left.
The number of times the decimal is moved depends on the number of leading zeros.

Example:

3 leading zeros

$$9.3 \cdot 0.001 \rightarrow 0.009.3 \rightarrow 0.0093$$

3   2   1

3 movements left

Dividing by Powers of 10

Dividing/Trailing Zeros

Dividing by a power of 10 with trailing zeros moves the decimal to the left.
The number of times the decimal is moved depends on the number of trailing zeros.

Example:

3 trailing zeros

$$9.3 \div 1{,}000 \rightarrow 0.009.3 \rightarrow 0.0093$$

3   2   1

3 movements left

Dividing/Leading Zeros

Dividing by a power of 10 with leading zeros moves the decimal to the right.
The number of times the decimal is moved depends on the number of leading zeros.

Example:

3 leading zeros

$$9.3 \div 0.001 \rightarrow 9.300. \rightarrow 9{,}300.$$

1   2   3

3 movements right