WHY DO WE SAY "POWERS OF 10"?

$100 = 10 \times 10 = 10^2$

$1{,}000 = 10 \times 10 \times 10 = 10^3$

$10{,}000 = 10 \times 10 \times 10 \times 10 = 10^4$

etc

Numbers 10, 100, 1000, etc can be written as a power of 10, hence the name "powers of 10".

MULTIPLYING A DECIMAL BY 10

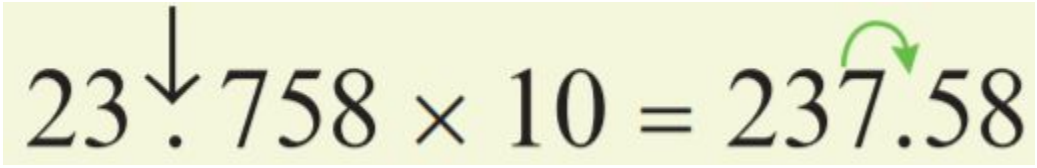
Multiplying a decimal by 10

examples: $2.7 \times 10 = 27$

$2.75 \times 10 = 27.5$

$16.537 \times 10 = 165.37$

When a decimal is multiplied by 10, the decimal point moves 1 place to the right.



MULTIPLYING A DECIMAL BY 100 and 1000

Multiplying a decimal by 100

example: $36.532 \times 100 = 3653.2$

When a decimal is multiplied by 100, the decimal point moves 2 places to the right.

Multiplying a decimal by 1000

example: $36.53278 \times 1000 = 36532.78$

When a decimal is multiplied by 1000, the decimal point moves 3 places to the right.

etc

DIVIDING A DECIMAL BY A POWER OF 10

Dividing a decimal by 10

examples: $268.5 \div 10 = 26.85$

$36.52 \div 10 = 3.652$

When a decimal is divided by 10, the decimal point moves 1 place to the left.

Dividing a decimal by 100

example: $268.5 \div 100 = 2.685$

When a decimal is divided by 100, the decimal point moves 2 places to the left.

etc