Multiplying by the following powers of 10 moves the decimal as follows:

$10^{4} = 10,000 \longrightarrow$ The decimal moves to the

$10^{3} = 1,000 \longrightarrow$ The decimal moves to the

$10^{2} = 100 \longrightarrow$ The decimal moves to the

$10^{1} = 10 \longrightarrow$ The decimal moves to the

$10^{0} = 1 \longrightarrow$ The decimal does not move.

$10^{-1} = 1/10 = 0.1 \longrightarrow$ The decimal moves to the

$10^{-2} = 1/100 = 0.01 \longrightarrow$ The decimal moves to the

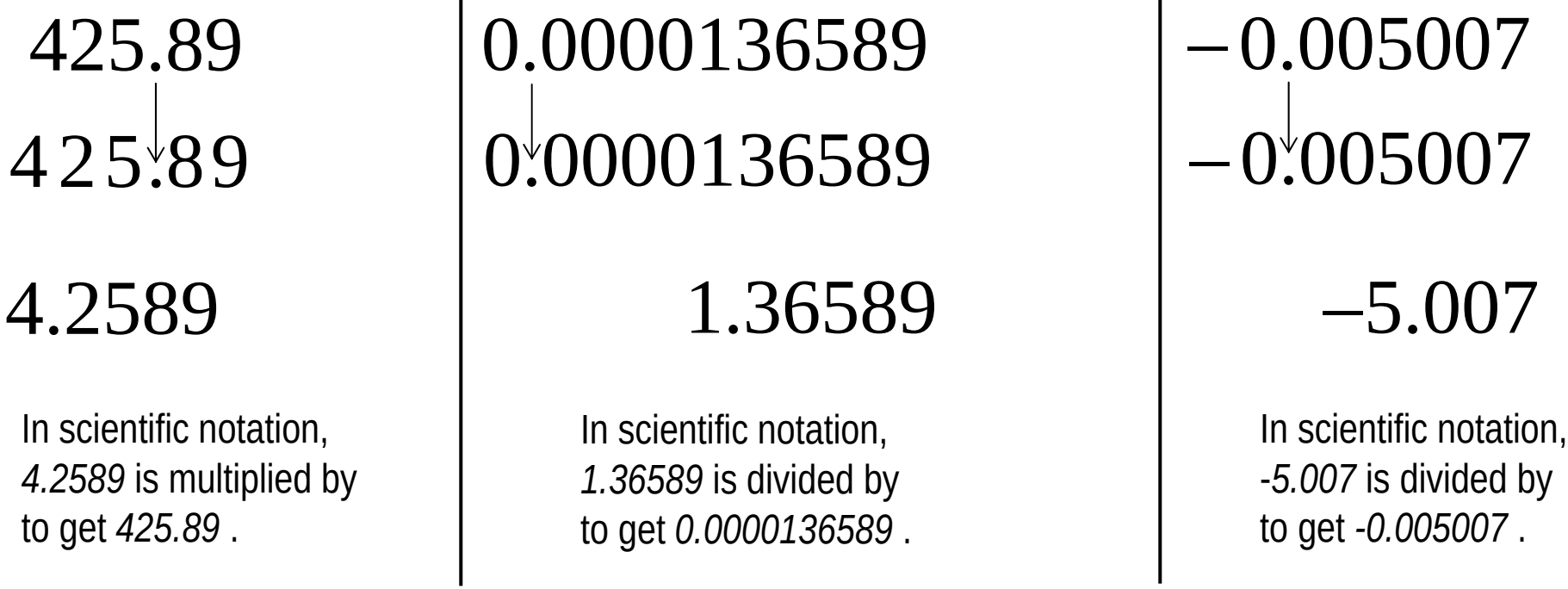
$10^{-3} = 1/1,000 = 0.001 \longrightarrow$ The decimal moves to the

$10^{-4} = 1/10,000 = 0.0001 \longrightarrow$ The decimal moves to the

Notice that *positive exponents* move the decimal to the *right* and *negative exponents* move the decimal to the *left*.

2.35×10^{4}	-5.489×10^{-8}	7.00305×10^{-5}
	Negative *5,489* hundred billionths.	*700,305* ten billionths.

Note: In these examples, we are taking numbers out of scientific notation. Now we will learn how to write numbers in scientific notation!


425.89
425.89
4.2589
In scientific notation, 4.2589 is multiplied by to get 425.89 .
0.0000136589
0.0000136589
1.36589
In scientific notation, 1.36589 is divided by to get 0.0000136589 .
−0.005007
−0.005007
−5.007
In scientific notation, -5.007 is divided by to get -0.005007 .

$1000.0001\,m$

1000.0001

1.0000001

$-or-$

1.0000001

Recall: kilo (k) means

$0.00000000107\,sec$

0.00000000107

1.07

$-or-$

1.07

Recall: nano means