Multiplying and Dividing by 10, 100 and 1000

A reminder

Example 1

34 x 10 = 340	987 x 10 = 9870	12.7 x 10 = 127
34 x 100 = 3400	987 x 100 = 98700	12.7 x 100 = 1270
34 x 1000 = 34000	987 x 1000 = 987000	12.7 x 1000 = 12700

8.9765 x 10 = 89.765	0.9 x 10 = 9	0.00543 x 10 = 0.0543
8.9765 x 100 = 897.65	0.9 x 100 = 90	0.00543 x 100 = 0.543
8.9765 x 1000 = 8976.5	0.9 x 1000 = 900	0.00543 x 1000 = 5.43

Example 2

34 ÷ 10 = 3.4	987 ÷ 10 = 98.7	12.7 ÷ 10 = 1.27
34 ÷ 100 = 0.34	987 ÷ 100 = 9.87	12.7 ÷ 100 = 0.127

Exercise

1. Multiply each of the following numbers by 10 and 100:

		x10	x100
a)	9		
b)	73		
c)	124		
d)	810		
e)	3700		

2. Divide each of the following numbers by 10 and 100:

		÷10	÷100
a)	9000		
b)	73 000		
c)	1 244 000		
d)	34 000		
e)	37 000 000		

3. Multiply each of the following numbers by 10, 100 and 1000:

		x10	x100	x1000
a)	8.7			
b)	0.32			
c)	103.5			
d)	0.09			
e)	23.06			

4. Divide each of the following numbers by 10, 100 and 1000:

		÷10	÷100	÷1000
a)	8.7			
b)	0.32			
c)	103.5			
d)	0.09			
e)	23.06			

Powers of 10

A reminder

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

$10^3 = 10 \times 10 \times 10 = 1000$

Here are some powers of 10

Power	10^0	10^1	10^2	10^3	10^4
Value	1	10	100	1000	10 000

- Multiplying by 10^2 is exactly the same as multiplying by 100.
- Dividing by 10^2 is exactly the same as dividing by 100.
- Using powers of 10 is easier because the power tells you how many places to move the decimal point.

Example 1

$3.456 \times 10^2 = 345.6$

$89.78 \div 10^2 = 0.8978$

Exercise

1. Multiply each of the following numbers by 10 and 10^2:

		x10	x10^2
a)	6.5		
b)	7.3		
c)	0.124		
d)	207		
e)	0.08		

2. Divide each of the following numbers by 10 and 10^2:

		÷10	÷10^2
a)	2.7		
b)	0.45		
c)	207		
d)	0.08		
e)	37.4		