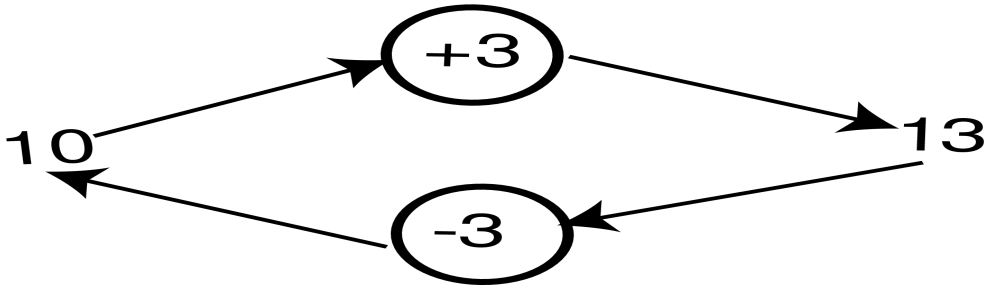
L2 Division patterns

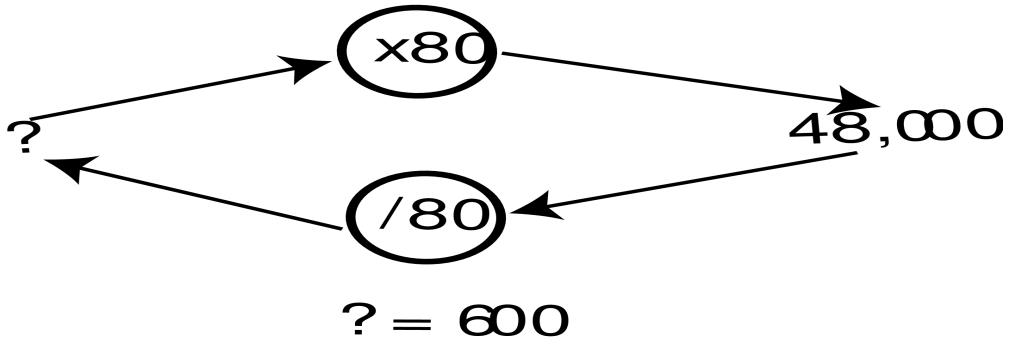
2.1 Division

How did you do question 1.1.4 from Lesson L1? - To find out the missing number you had to perform the inverse operation to multiplication.

As you already know, Addition and subtraction are inverses of each other. i.e. If we take any number x, and add another number n to it, and then subtract n from the sum we get x back. e.g. 10 + 3 = 13; 13 – 3 = 10



Similarly, multiplication and division are inverses of each other. In problem 1.1.4 of L1 you divided the product by the known factor.



8 x 6 = 48
80 x 6 = 480
80 x 60 = 4800
80 x 600 = 48,000
Therefore 48,000 ÷ 80 = 600

Multiplication and Division are inverses of each other. Take any number, say x. Multiply it by another number n. Then divide by n. You get x back.
Example: 9 x 7 = 63; so, 63 ÷ 9 = 7, and 63 ÷ 7 = 9

Look at the following pattern.

1.	7	x	8	=	56	-->	56	÷	8	=	7
2.	70	x	8	=	560	-->	560	÷	8	=	70
3.	700	x	8	=	5600	-->	5600	÷	8	=	700
4.	7000	x	8	=	56,000	-->	56,000	÷	8	=	7000
5.	7000	x	80	=	5,60,000	-->	5,60,000	÷	80	=	7000
6.	7000	x	800	=	56,00,000	-->	56,00,000	÷	800	=	7000

You are familiar with the pattern on the Left hand side. This is the multiplication pattern of Lesson L1.

Note: When we multiply one of the factors by 10, the product is multiplied by 10.

Actually this pattern is true for any number not just powers of 10 (like 100, 1000, etc), but it is much easier to follow when we consider multiplying by 10 and its powers.

Examine the division pattern from lines 1 – 4 on the right hand side. When you multiply the dividend (56---) by 10, the quotient (7--) is multiplied by 10.

The pattern in lines 5, 6 is different. When you multiply the dividend (56---) by 10, and the divisor by 10, the quotient remains the same.

2.1.1 Use the above patterns to find the values of n. Do not do the actual multiplication or division except in the sums that are marked by a ***

a. 6 ÷ 2 = n ***
   2 x n = 6

b. 60 ÷ 20 = n
   20 x n = 60

c. 600 ÷ 20 = n
   20 x n = 600

d. 6000 ÷ 20 = n
   20 x n = 6000

e. 600 ÷ 200 = n
   200 x n = 600

f. 32 ÷ 4 = n ***

g. 320 ÷ 40= n

h. 3200 ÷ 40= n

i. 32,000 ÷ 40= n

j. 32,000 ÷ 400= n

k. 32,000 ÷ 4= n

l. 900 ÷ 30 = n ***

m. 9000 ÷ 30 = n

n. 90,000 ÷ 30 = n

End of L2