

2	3	4	24
5	1	8	40
6	7	9	378
60	21	288	

The easiest way to solve this problem is to find the prime factors of the numbers on the outside. We can start off with 21. Since only 3 odd numbers can multiply to be an odd number, the only possible values are 3, 1 and 7. This is because 5 and 9 does not divide into 21. Then, we work out the numbers that can go into 24 and 60. The box on the top left corner must have a number that fits in with both 24 and 60. The possibilities are:

24: $2 \times 3 \times 4$
 60: $2 \times 3 \times 5$

As we can see, 2 is a common multiple between the two numbers. Therefore, it goes to the top left box.

Then, we work out the middle row. We know that one of the numbers is going to be 2, 5 or 6. We also know that the middle box is going to be either 3, 1, or 7. The only possible number that divides into 40 after being multiplied together is 5 and 1, which leaves 8. So the box should look like this:

2	3	4
5	1	8
6	7	

The only number that is left is 9, which goes into the bottom right box.

	2	8	
10	11	12	1
5	6	9	7
↑50	3	4	↗7
			←12
396			

1320

For this one, we can immediately see that the only numbers that can go into the two boxes on the right is 1 and 7. Since 7 cannot divide into 1320, the top box must be 1 and the bottom must be 7.

Being the largest number there, the smallest numbers would not multiply to be 1320. This means that the only numbers that can fit on the second row would be 10, 11 and 12. We can tell that the 10 will go to the left box because only 5 and 10 can multiply to be 50.

We can also tell that the bottom two boxes are going to be filled with 3 and 4. However, we do not know where they go.

$$396 \div 3 = 132$$

$$396 \div 4 = 99$$

Although 99 can be divided by 9 and 11, which has not been used yet, there will be a box left which cannot be filled since 1 is already used. Therefore, the only number that can go above 396 is 3. Since $396 \div 3 = 132$, 11 can be divided into it to make 12.

$6 \times 2 = 12$. Therefore, next to the number 10, goes 11 and next to that goes 12.

Since some of the boxes don't have numbers on the outside of them, 2 and 6 can be placed anywhere in the 396 column. Finally, the remaining numbers can be placed in any free boxes.