

Lattice Method for Multiplication

Multiply 658 and 47

Arrange 658 and 47 around a 3×2 grid as shown below:

| | | | |
|---|---|---|---|
| 6 | 5 | 8 | |
| | | | 4 |
| | | | 7 |

Draw the diagonals of the small squares, find products of each square, and put the answers in intersecting rows and columns as already demonstrated:

Tens Column $6 \times 4 = \underline{24}$

→

| | | | |
|--------|--------|--------|---|
| 6 | 5 | 8 | |
| 2 4 | 2 0 | 3 2 | 4 |
| 4 2 | 3 5 | 5 6 | 7 |

Ones Column $6 \times 4 = \underline{24}$

←

Then, going from right to left, add the numbers down the diagonals as shown before.

The first diagonal has only 6. Bring 6 down.

The second diagonal has 2, 5, and 5. Add these numbers to get 12. Bring 2 down and carry the 1 over to the next diagonal.

The third diagonal has 3, 0, 3, and 2. Add these numbers to get 8 and add 1 (your carry) to 8 to get 9.

and so forth...

| | | | | |
|---|--------|--------|--------|---|
| | 6 | 5 | 8 | |
| 3 | 2 4 | 2 0 | 3 2 | 4 |
| 0 | 4 2 | 3 5 | 5 6 | 7 |
| | 9 | 2 | 6 | |

After the grid is completed, what you see in red is the answer to the multiplication that is 30926