Multiplication by 10,000 and 1,000

Do you see a pattern in these problems and answers? Compare the number of zeros in the factors and products.

4 x 10 = 40	4 x 20 = 80
4 x 100 = 400	4 x 200 = 800
4 x 1,000 = 4,000	4 x 2,000 = 8,000

You will notice that the same number of zeros appear in both the factors and the products. This occurs because you are multiplying by tens, hundreds, and thousands. The pattern will continue to apply as you go up the place value chart (ten thousands, hundred thousands, and so on).

Find 7 x 400.

1. How many zeros are in the factors? Multiply the ones' and tens' columns. The same number of zeros are in the product as are in the factor. In problems like this, simply put the same number of zeros in the product as are in the factors.

```
    H T O
    4 0 0
 x      7
 2, 8 0 0
```

2. Multiply 7 x 4 = 28.

3. 7 x 400 = 2,800.

Look at these examples. Do you notice another pattern?

50 x 30 = ?

30 x 70 = 2,100
30 x 700 = 21,000
300 x 700 = 210,000
300 x 7,000 = 2,100,000

Follow the same three steps listed above.

1. How many zeros are in the factors. Count the total number and place the same number of zeros in the product as there are in the factors.

```
   50
 x 30
   00
```

2. Multiply. 5 x 3 = 15

3. 50 x 30 = 1,500