

Name: \_\_\_\_\_

## Multiplying with Final Zeros

When you multiply by a number that is a **place value** number (10, 100, 1000, etc...), you can take a shortcut and tack on its zeros at the end of the number you are multiplying.

Why?—because each time you multiply by 10 you shift each digit in the number you are multiplying one digit to the left. So, you add a final zero to the number each time you multiply by 10.

$$45 \times 100 = 4,500$$

$$80 \times 10 = 800$$

$$100 \times 78 = 7,800$$

$$10 \times 30 = 300$$

How about when you multiply numbers with **final** zeros (zero digits at the end) which are not place value numbers (for example, 50, 600, 2000...)?

Here's what you can do: You can multiply the non-zero digits together (forgetting about the final zeros) and then tack on the final zeros from **both** the numbers you are multiplying.

*Example:*

$$30 \times 200 = 3 \times 2 \times 10 \times 100 = 6 \times 10 \times 10 \times 10 = 6,000$$

OR, you can take a short-cut:

First, multiply  $3 \times 2 = 6$ .

Then, tack on three zeros (one from the 30 and two from the 200).  
This gives 6,000

How about  $40 \times 50$ ?

$$40 \times 50 = 4 \times 5 \times 10 \times 10 = 20 \times 10 \times 10 = 2,000$$

Or, taking a short-cut:

$$4 \times 5 = 20$$

Now, tack on two zeros (one from the 40 and one from the 50).

This gives 2000

$$\text{So, } 40 \times 50 = 2,000$$

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*Your Turn:* (Do these using the short-cut—multiply the non-zero digits, and then tack on all final zeros.)

$30 \times 80 =$

$50 \times 50 =$

$20 \times 200 =$

$60 \times 300 =$

$3,000 \times 50 =$

$900 \times 20 =$

$200 \times 400 =$

$300 \times 700 =$

$50 \times 2,000 =$

$200 \times 80 =$

*Fill in the Blanks:*

$\underline{\hspace{2cm}} \times 40 = 80$

$\underline{\hspace{2cm}} \times 200 = 800$

$\underline{\hspace{2cm}} \times 4 \text{ tens} = 8 \text{ tens}$

$\underline{\hspace{2cm}} \times 2 \text{ hundreds} = 8 \text{ hundreds}$

$80 \times \underline{\hspace{2cm}} = 160$

$40 \times \underline{\hspace{2cm}} = 1,200$

$80 \times \underline{\hspace{2cm}} = 1,600$

$20 \times \underline{\hspace{2cm}} = 1,200$

$3 \times \underline{\hspace{2cm}} = 1,200$

$2 \times \underline{\hspace{2cm}} = 1,200$

$4 \times \underline{\hspace{2cm}} = 1,200$

$6 \times \underline{\hspace{2cm}} = 1,200$