

Multiplying by Multiples of 10

Multiplying by 10, 20, 30, ... uses a tiny shortcut: do the basic fact, then add a zero on the end. The reason works because of place value.

Step	Example: 7×30
1. Use the basic fact (drop the zero).	$7 \times 3 = 21$
2. Add a zero to the end.	$21 \rightarrow 210$

Key Concepts

1. A *multiple of 10* is a number that ends in 0: 10, 20, 30, 40, ..., 90.
2. To multiply by a multiple of 10, first multiply by the basic (non-zero) part. Then add one zero to the end of the product.
3. The trick works because $30 = 3 \times 10$. So 7×30 is really $7 \times 3 \times 10$, which is $21 \times 10 = 210$.
4. The same idea works for any multiple of 10 — never just guess at the number of zeros, always do the basic fact first.


Worked Examples

① 7×30

 Drop the zero from 30 and do the basic fact: $7 \times 3 = 21$. Now bring the zero back by sticking it on the end: 210. So $7 \times 30 = 210$. (Why this works: $30 = 3 \times 10$, so $7 \times 30 = 7 \times 3 \times 10 = 21 \times 10$.)


 **Answer:** 210

② 5×60

 Basic fact first: $5 \times 6 = 30$. Now add a zero: 300. Notice that the product already had a zero, and we added another — 5×6 gave us 30, so the answer is 3 hundreds, or 300.

 **Answer:** 300

③ 8×90

 Basic fact: $8 \times 9 = 72$. Add a zero: 720. So $8 \times 90 = 720$. As a sanity check, 8×100 would be 800, and 90 is a little less than 100, so 720 being a bit less than 800 looks right.

 **Answer:** 720

Practice Problems

Find each product.

1. 4×20 _____

2. 3×50 _____

3. 6×40 _____

4. 9×30 _____

5. 7×60 _____

6. 8×50 _____

7. 2×90 _____

8. 5×80 _____

9. 3×70 _____

11. 6×90 _____

10. 4×60 _____

12. 9×80 _____

Study Tips

- ✎ Always do the basic fact first — do not let the zero distract you. The zero waits patiently at the end.
- ✎ If the basic fact already has a zero (like $5 \times 6 = 30$), you end up with *two* zeros at the end. That is correct, not a mistake!
- ✎ Mentally estimate to check: 7×30 should be roughly $7 \times 30 \approx 7 \times 30$. If you accidentally write 21, the missing zero will jump out at you.

Word Problems

1. A box holds 40 crayons. How many crayons are in 6 boxes?

Answer: _____

2. There are 30 desks in each classroom. If there are 8 classrooms, how many desks are there in all?

Answer: _____

Answer Key — with Friendly Explanations**Practice Problems**

1. $4 \times 2 = 8$, add a zero.

 **Answer:** 80

2. $3 \times 5 = 15$, add a zero.

 **Answer:** 150

3. $6 \times 4 = 24$, add a zero.

 **Answer:** 240

4. $9 \times 3 = 27$, add a zero.

 **Answer:** 270

5. $7 \times 6 = 42$, add a zero.

 **Answer:** 420

6. $8 \times 5 = 40$, add a zero. (Notice: $40 \rightarrow 400$, two zeros total.)

 **Answer:** 400

7. $2 \times 9 = 18$, add a zero.

 **Answer:** 180

8. $5 \times 8 = 40$, add a zero.

 **Answer:** 400

9. $3 \times 7 = 21$, add a zero.

 **Answer:** 210

10. $4 \times 6 = 24$, add a zero.

 **Answer:** 240

11. $6 \times 9 = 54$, add a zero.

 **Answer:** 540

12. $9 \times 8 = 72$, add a zero.

 **Answer:** 720**Word Problems**

1. 6×40 : $6 \times 4 = 24$, add a zero. 240 crayons.

 **Answer:** 240 *crayons*

2. 8×30 : $8 \times 3 = 24$, add a zero. 240 desks.

 **Answer:** 240 *desks*

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