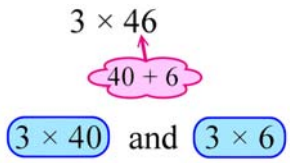
Multiply in Parts 1

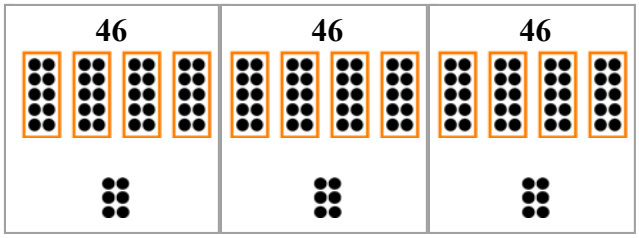
Example 1. To multiply 3 × 46, break 46 into two parts: 40 and 6.

Then multiply those two parts separately by 3:
3 × 40 is 120, and 3 × 6 is 18.

Lastly add these two partial results: 120 + 18 = 138.



Example 2. This illustration shows the same thing, 3 × 46, using bundles of ten.



← 3 × 40 = **120**

← 3 × 6 = **18**

120 + **18** = **138**

Study these examples. Multiply the tens and ones separately, then add:

8 × 13
(10 + 3)
8 × 10 and 8 × 3
80 and 24
= 104

5 × 24
(20 + 4)
5 × 20 and 5 × 4
100 and 20
= 120

7 × 68
(60 + 8)
7 × 60 and 7 × 8
420 and 56
= 476

1. Multiply the tens and ones separately. Then add to get the final answer.

a. 6 × 27
(20 + 7)
6 × _____ and 6 × _____
_____ and _____
= _____

b. 5 × 83
(+)
5 × _____ and 5 × _____
_____ and _____
= _____

c. 9 × 34
(+)
9 × _____ and 9 × _____
_____ and _____
= _____

d. 3 × 99
3 × _____ and 3 × _____
_____ and _____
= _____

e. 7 × 65
7 × _____ and 7 × _____
_____ and _____
= _____

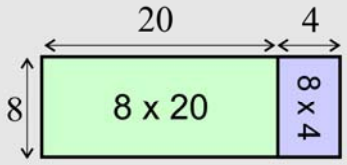
f. 4 × 58
4 × _____ and 4 × _____
_____ and _____
= _____

Example 3. The picture shows the area of a rectangle with sides 8 and 24. It is also divided into two rectangles.

The area of the WHOLE rectangle is 8 × 24 square units. We can find 8 × 24 by calculating the areas of the *two* rectangles, and adding.

The area of the first rectangle is 8 × 20 = 160 square units.
The area of the second rectangle is 8 × 4 = 32 square units.

Then, the area of the whole rectangle is the sum 160 + 32 = 192 square units.



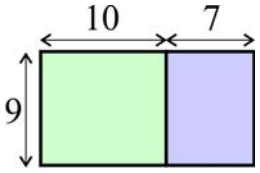
$8 \times 24 = 8 \times 20 + 8 \times 4$

$= 160 + 32 = 192$

2. Fill in the missing numbers. Write the area of the *whole* rectangle as a SUM of the areas of the *smaller* rectangles. Also find the total area.

a. ___ × _____ = ___ × _____ + ___ × ___

= _____ + _____ = _____



b. ___ × _____ = ___ × _____ + ___ × ___

= _____ + _____ = _____

c. ___ × _____ = ___ × _____ + ___ × ___

= _____ + _____ = _____

3. It is your turn to draw. Draw a two-part rectangle to illustrate the multiplications, like in the previous problem. You don't have to draw accurately; a sketch is good enough.

a. 7 × 16 = ___ × _____ + ___ × ___

=

b. 5 × 21 = ___ × _____ + ___ × ___

=

c. 8 × 34 = ___ × _____ + ___ × ___

=

4. Break the second factor into tens and ones. Multiply separately, and add.

a. 6 × 19	**b. 3 × 73**	**c. 4 × 67**
$6 \times 10 \rightarrow$ 60 $6 \times 9 \rightarrow$ + 54 114	$3 \times$ _____ → $3 \times$ _____ → + _____	
d. 5 × 92	**e. 9 × 33**	**f. 7 × 47**

5. Multiply in parts. You can write the partial products under the problems, if you wish.

a. 5 × 13 = _____	**b.** 9 × 15 = _____	**c.** 5 × 33 = _____
d. 8 × 21 = _____	**e.** 4 × 22 = _____	**f.** 7 × 51 = _____

6. Compare. Write < , > , or = in the boxes.

a. 10 × 10 ☐ 9 × 11 **b.** 6 × 12 ☐ 5 × 14 **c.** 8 × 22 ☐ 5 × 27

7. Solve. Write a number sentence for each problem, *not* just the answer.

a. Jack bought eight shirts for $14 each. What was the total cost?

_____

b. Mary and Harry set up nine rows of seats in the school auditorium, with 14 seats in each row. After that, they still had 56 seats left in the storage that they didn't use. How many seats are there in total?

_____

c. A small hammer costs $17. Another, much better one, costs three times as much. Find the cost of the more expensive hammer.

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