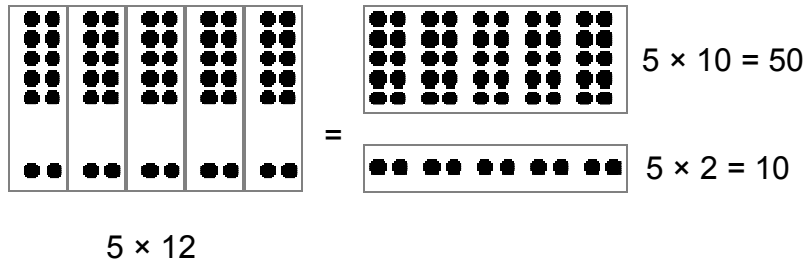
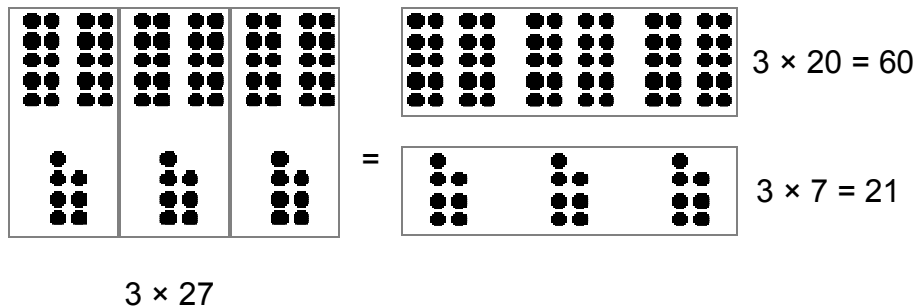


We know that  $5 \times 12 = 60$  from studying the multiplication tables. Look at the pictures and see how the same problem can be solved very easily!



Each 12 is  $10 + 2$ . We multiply the tens and ones separately and then add:

$$5 \times 12 = 5 \times 10 + 5 \times 2 = 50 + 10 = 60$$



Each 27 is  $20 + 7$ . Multiply the tens and ones separately and then add:

$$3 \times 27 = 3 \times 20 + 3 \times 7 = 60 + 21 = 81$$

Examples:

$$\underline{6 \times 18} = 6 \times (10 + 8).$$

$6 \times 10 = 60$	60
$6 \times 8 = 48$	+ 48
	-----
	108


$$\underline{7 \times 32} = 7 \times (30 + 2).$$

$7 \times 30 = 210$	210
$7 \times 2 = 14$	+ 14
	-----
	224

## Example problems

1. Draw ten-sticks and one-dots to illustrate the numbers. Then use distributive property to multiply.

$5 \times 23$



$5 \times 20 =$

$5 \times 3 =$

$5 \times 23 = \underline{100 + 15} = \underline{115}$

$3 \times 65$

$2 \times 58$

$4 \times 26$

2. Break the second number (factor) into tens and ones. Multiply separately, and add.

$$\underline{5 \times 17} = 5 \times (10 + 7).$$
$$5 \times 10 =$$
$$5 \times 7 = \quad +$$
$$\underline{\hspace{2cm}}$$

$$\underline{8 \times 41} = 8 \times (\underline{\hspace{1cm}} + \underline{\hspace{1cm}}).$$
$$8 \times 40 =$$
$$8 \times 1 = \quad +$$
$$\underline{\hspace{2cm}}$$

$$\underline{4 \times 17} = 4 \times (\underline{\hspace{1cm}} + \underline{\hspace{1cm}}).$$
$$4 \times$$
$$4 \times \quad +$$
$$\underline{\hspace{2cm}}$$

$$\underline{6 \times 53} = 6 \times (\underline{\hspace{1cm}} + \underline{\hspace{1cm}}).$$
$$\quad +$$
$$\underline{\hspace{2cm}}$$

3. Break the second number (factor) into tens and ones. Multiply separately, and add.

a.  $3 \times 23 = 3 \times 20 + 3 \times 3$

$$= \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

c.  $5 \times 33 = 5 \times \underline{\hspace{1cm}} + 5 \times \underline{\hspace{1cm}}$

$$= \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

e.  $8 \times 15 = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} + \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$

$$= \underline{\quad} + \underline{\quad} = \underline{\quad}$$

4. Now break the second number (factor) into hundreds, tens and ones. Multiply separately, and add.

a.  $5 \times 123$

$$\begin{array}{r} 5 \times 100 = \\ 5 \times 20 = \\ 5 \times 3 = \end{array} \quad + \quad \underline{\quad}$$

b.  $8 \times 115$

$$\begin{array}{r} 8 \times 100 = \\ 8 \times 10 = \\ 8 \times 5 = \end{array} \quad + \quad \underline{\quad}$$

g.  $5 \times 194$

$$\quad \quad \quad + \quad \underline{\quad}$$

h.  $7 \times 109$

$$\quad \quad \quad + \quad \underline{\quad}$$

5. Write a mathematical sentence(s) for the problems. Multiply using the principle above (distributive property).

a) Mom bought five sheets and blanket. The sheets cost \$15 each, and the blanket cost \$7. How much was her total bill?

d) A haircut costs 13 dollars. But, you can buy a discount ticket for \$65 that gives you six haircuts. How much money do you save by buying the discount ticket?

6. Continue the patterns.

a.	d.
$3 \times 80 =$	$6 \times 50 =$
$4 \times 80 =$	$6 \times 60 =$
$5 \times 80 =$	$6 \times 70 =$

7. Continue the patterns. Think back to multiplication.

a.	d.
$650 \times 10 =$	$180 \times 3 =$
$660 \times 10 =$	$210 \times 3 =$
$670 \times 10 =$	$240 \times 3 =$
$680 \times 10 =$	$270 \times 3 =$