

## MULTIPLYING FACTORS EQUAL DISTANCE FROM NUMBER

Problem:

$$38 \times 42 = ?$$

Method: 1. Square the difference each factor is from the midway number.

2. Square the midway number.

3. Subtract the product in #1 from the square of the midway number in #2.

Solve: 1. Square 2, the distance 38 and 42 are from 40, the midway number.

2. Square the midway number, 40 to get 1600.

3. Subtract square in #1 and #2.  
 $1600 - 4 = \underline{1596}$  Answer

TRY THESE:

1.  $53 \times 47 =$

2.  $62 \times 58 =$

3.  $21 \times 19 =$

4.  $84 \times 76 =$

5.  $69 \times 71 =$

6.  $79 \times 81 =$

7.  $89 \times 91 =$

8.  $5.9 \times 6.1 =$

9.  $52 \times 58 =$

10.  $34 \times 36 =$

LIKE FACTORS WITH ONES IN THE ONES' PLACE

Problem:  $71 \times 71 = ?$

- Method:
1. Write down the one in the answer in the ones' place.
  2. Add the two tens' digits. Write down the ones' digit and remember the tens' digit.
  3. Multiply the tens' digits and add the digit remembered in #2.

- Solve:
1. Write down the one.
  2.  $7 + 7 = 14$  Write down the '4' and remember the 1
  3.  $7 \times 7 = 49$  plus 1 = 50  
5041 Answer

TRY THESE:

1.  $81 \times 81 =$
2.  $91 \times 91 =$
3.  $31 \times 31 =$
4.  $61 \times 61 =$
5.  $51 \times 51 =$
6.  $21 \times 21 =$
7.  $41 \times \$4.10 =$
8.  $71 \times \$7.10 =$

USING THE DISTRIBUTIVE PROPERTY IN  
MULTIPLICATION

Problem:

$$4 \times 15 + 6 \times 15 = ?$$

- Method:
1. Notice if any factors have been repeated (or distributed)?
  2. Add factors not repeated or distributed.
  3. Multiply repeated or distributed factor by sum in #2.

- Solve:
1. 15 is distributed using the distributive property.
  2. Numbers not distributed are 4 and 6.  
 $4 + 6 = 10$
  3. Multiply sum in #2 by distribute number, 15.  
 $10 \times 15 = \underline{150}$  Answer

Or:

$$12 \times 85 + 12 \times 15 =$$

1. 12 is distributed.
2.  $85 + 15 = 100$
3.  $12 \times 100 = \underline{1200}$  Answer

TRY THESE:

1.  $(12 \times 75) + (12 \times 25) =$
2.  $7 \times 15 + 3 \times 15 =$
3.  $8 \times 18 + 2 \times 18 =$
4.  $4 \times 16 + 6 \times 16 =$
5.  $(23 \times 101) + (102 \times 23)$  Estimate

TO MULTIPLY TWO NUMBERS JUST UNDER 100  
(BETWEEN 90 and 100)

Problem:  $93 \times 96 = ?$

- Method:
1. Subtract both numbers from 100.
  2. Multiply the two differences; write in the ones' and tens' place.
  3. Subtract one difference in #1 from the opposite number; write down in the hundreds' and thousands' places.

- Solve:
1.  $100 - 93 = 7$  and  $100 - 96 = 4$
  2. Multiply  $7 \times 4 = 28$ , the tens' and ones' digits in the answer.
  3.  $93 - 4 = 89$  or  $96 - 7 = 89$ , the hundreds' and thousands' digit.

8928 Answer

TRY THESE:

1.  $92 \times 97 =$
2.  $94 \times 96 =$
3.  $93 \times 95 =$
4.  $97 \times 91 =$
5.  $93 \times 94 =$

TO MULTIPLY TWO NUMBERS JUST OVER 100  
(BETWEEN 100 and 110)

Problem:  $106 \times 108 = ?$

- Method:
1. Multiply ones' digits; write in the tens' and ones' places in the answer.
  2. Add the one's digit of one of the numbers to the other factor; this will be the first three digits in the answer.

- Solve:
1.  $6 \times 8 = 48$
  2.  $106 + 8$  or  $108 + 6$   
Both ways the sum is 114.

11,448 Answer

TRY THESE:

1.  $102 \times 108 =$
2.  $105 \times 107 =$
3.  $109 \times 104 =$
4.  $103 \times 106 =$
5.  $108 \times 106 =$
6.  $107 \times 103 =$
7.  $102 \times 105 =$
8.  $103 \times 108 =$