Name _____

Multiplying with Tens

Solve each problem.

1. Juice boxes come in cases of 24. A school ordered 480 juice boxes. How many cases of juice boxes did the school order?

_____

2. John has 630 baseball cards. He sorts the cards into stacks of 30 cards. How many stacks can he make?

_____

3. A bank received a supply of 2,000 quarters. Each roll of quarters has 40 quarters in it. How many rolls of quarters did the bank receive?

_____

4. There are 10 tickets in each strip of carnival tickets. A total of 3,850 tickets were sold in one day. How many strips of tickets were sold that day?

_____

5. Write Math ▶ **Explain** what strategy you used to solve Problem 3.

_____

_____

_____

_____

Name _____

Decode the Message

**Use rounding to estimate the greatest product in each exercise.
Then write the letter of the correct answer above its place in the
letter puzzle below. For example, the letter of the greatest product
from Exercise 1 goes above Blank 1. The first one has been done
for you.**

1.	**A**	42×50	**E**	33×64	**T**	⟨48×56⟩		
2.	**A**	12×15	**B**	11×14	**C**	10×13		
3.	**J**	91×24	**O**	89×33	**P**	82×31		
4.	**K**	78×46	**R**	74×48	**E**	79×55		
5.	**A**	45×32	**I**	48×39	**R**	43×34		
6.	**I**	25×26	**E**	23×27	**Y**	22×27		
7.	**T**	50×48	**W**	56×42	**B**	51×44		
8.	**T**	34×62	**R**	32×69	**S**	37×65		
9.	**N**	88×72	**P**	67×70	**M**	91×64		
10.	**D**	43×53	**H**	42×56	**M**	42×61		

What is a great way to evaluate the reasonableness of an answer?

___ ___ ___ ___ ___ ___ T ___ ___ ___ ___
4.   8.   7.   5.   10.   2.   1.   6.   3.   9.

11. **Write Math** ▸ For Exercise 10, how
did you use estimation to decide
which was the greatest product?

_____

_____

_____

_____

12. **Stretch Your Thinking** How
could you estimate the product
253×93? **Explain.**

_____

_____

_____

_____

The Lattice Method

Among the earliest methods of multiplication is the lattice method.

Multiply. 13×52

- Write one factor along the top of the lattice and the other factor along the right side.

- Multiply each digit of the factors. Record the products inside the lattice so the ones and tens are separated by a diagonal.

- Add the numbers in the grid along the diagonals, starting from the lower right corner. Record each sum at the end of its diagonal just as you do when adding columns.

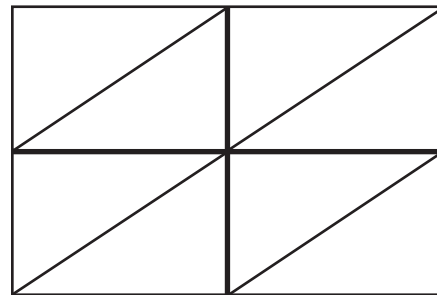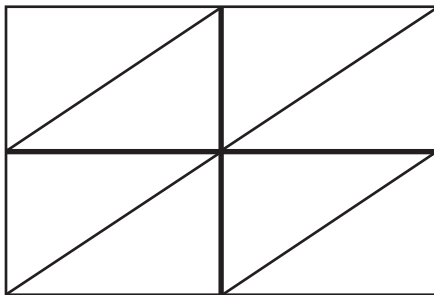- Read the digits down the left and across the bottom. This is the product.
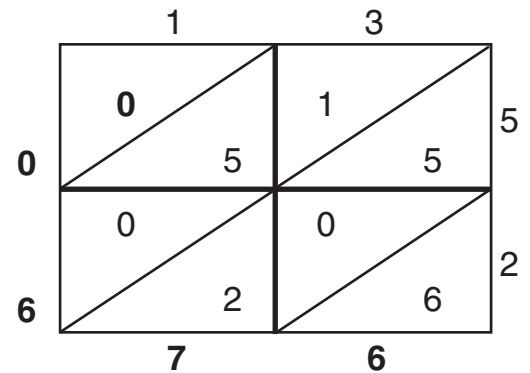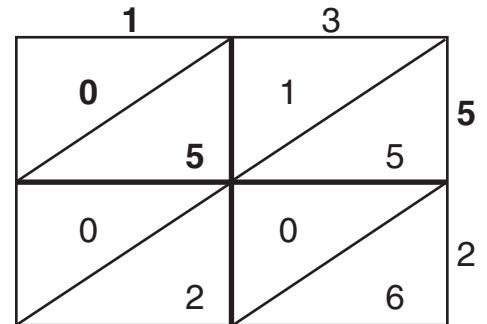
So, $13 \times 52 = 676$.

Use the lattice method to find the product.

1. $31 \times 22 = $ _____

2. $32 \times 56 = $ _____

3. **Write Math** ► How does the lattice method use partial products to multiply?

_____

_____

_____

Name _____

Reverse and Record

When Nestor records 2-digit by 2-digit multiplication, he always records the partial products in the following order:

(1) Multiply the tens by the tens.
(2) Multiply the ones by the tens.
(3) Multiply the tens by the ones.
(4) Multiply the ones by the ones.

One day he decides to reverse the order. He starts by multiplying the ones by the ones and works backward to multiplying the tens by the tens. He uses this strategy to multiply some numbers. Will Nestor's strategy give him the correct products?

Use Nestor's new strategy to find the products below. The first problem has been completed for you.

1. $\quad$ 57 $\times$ 35 35 250 210 + 1,500 1,995	**2.** $\quad$ 31 $\times$ 22	**3.** $\quad$ 44 $\times$ 63
4. $\quad$ 75 $\times$ 27	**5.** $\quad$ 83 $\times$ 19	**6.** $\quad$ 59 $\times$ 95

7. Stretch Your Thinking How can Nestor check that his products are correct?

_____

_____

_____

Name _____

Multiplication Mystery

Write the multiplication problem represented by the partial products. Then write the product.

1. 800 + 280 + 60 + 21

2. 600 + 40 + 180 + 12

_____

_____

3. 2,000 + 280 + 300 + 42

4. 3,600 + 300 + 300 + 25

_____

_____

5. 2,100 + 560 + 0 + 0

6. 7,200 + 270 + 320 + 12

_____

_____

7. [Write Math] Which exercise did you find the most difficult to solve? **Explain**.

_____

_____

Product Pairs

Tatum and Elija are doing their homework together. They need to find two problems that have the same product. Help Tatum and Elija finish their homework by finding the product in the first problem. Then find the unknown digit in the second problem that will make the products equal.

1.
$$\begin{array}{r} 34 \\ \times\,15 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 3\ 0 \\ \times1\,\square \end{array}$$

2.
$$\begin{array}{r} 46 \\ \times\,25 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 5\ 0 \\ \times2\,\square \end{array}$$

3.
$$\begin{array}{r} 54 \\ \times\,39 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 8\ 1 \\ \times2\,\square \end{array}$$

4.
$$\begin{array}{r} 75 \\ \times\,27 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 4\ 5 \\ \times4\,\square \end{array}$$

5.
$$\begin{array}{r} 44 \\ \times\,32 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 8\ 8 \\ \times1\,\square \end{array}$$

6.
$$\begin{array}{r} 90 \\ \times\,24 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 8\ 0 \\ \times2\,\square \end{array}$$

7.
$$\begin{array}{r} 64 \\ \times\,49 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 5\ 6 \\ \times5\,\square \end{array}$$

8.
$$\begin{array}{r} 38 \\ \times\,35 \\ \hline \rule{2cm}{0.4pt} \end{array}$$
$$\begin{array}{r} 9\ 5 \\ \times1\,\square \end{array}$$
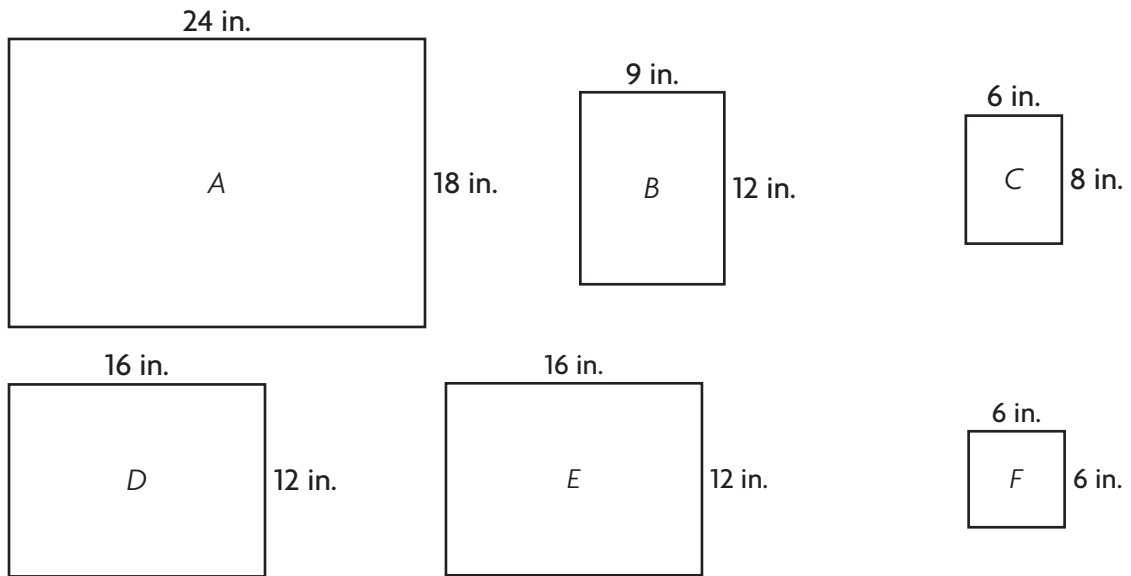
9. Stretch Your Thinking Show two problems that each have two 2-digit factors and the same product.

_____

_____

Pastry Chef's Problem

A pastry chef is making lemon squares and pumpkin squares for a special event. Here are the facts the chef knows.

- Each square is to measure 1 inch by 1 inch.
- There are to be an equal number of each type of square.
- All squares need to be baked at the same time.
- The chef has only the pans shown below.

1. The chef wants to make the greatest number of squares possible while using only 4 pans. Which pans should the chef choose?

24 in.

| A | 18 in. |

9 in.

| B | 12 in. |

6 in.

| C | 8 in. |

16 in.

| D | 12 in. |

16 in.

| E | 12 in. |

6 in.

| F | 6 in. |

The chef should use pans _____ .

The chef will make _____ of each kind of square.

2. **Write Math** ▸ **Explain** how you solved the problem.

_____

_____

_____

_____

_____