

Name \_\_\_\_\_

## Multiplication and Division Relationships

**Essential Question** How can you write related multiplication and division equations for 2-digit factors?

Multiplication and division are inverse operations.

### UNLOCK the Problem REAL WORLD

Megan has a rose garden with the same number of bushes planted in each of 4 rows. There are 48 bushes in the garden. How many bushes are in each row of Megan's garden?

- What do you need to find?

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#### One Way

Make an array.

$$48 \div 4 = \blacksquare$$

Count 48 tiles. Make 4 rows by placing 1 tile in each row.

Continue placing 1 tile in each of the 4 rows until all the tiles are used.

Draw the array you made.



There are \_\_\_\_\_ tiles in each row.

$$\underline{\hspace{2cm}} \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

So, there are \_\_\_\_\_ bushes in each row of Megan's garden.

#### Another Way

Write related equations.

$$48 \div 4 = \blacksquare$$

**Think:** 4 times what number equals 48?

$$4 \times \underline{\hspace{2cm}} = 48$$

You can check your answer using repeated addition.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

Write related equations.

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 48$$

$$48 \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

#### Math Talk

How can you tell if two equations are related?

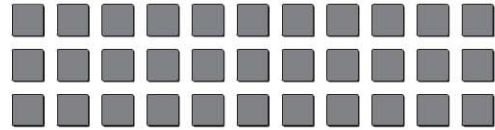
## Share and Show



1. Complete the related equations for this array.

$$3 \times 11 = 33$$

$$33 \div 3 = 11$$



Complete the related multiplication and division equations.

2.  $1 \times 11 = \underline{\quad}$

$$\underline{\quad} \times 1 = 11$$

$$11 \div 1 = \underline{\quad}$$

$$\underline{\quad} \div 11 = 1$$

3.  $5 \times \underline{\quad} = 60$

$$12 \times 5 = \underline{\quad}$$

$$\underline{\quad} \div 5 = 12$$

$$60 \div \underline{\quad} = 5$$

4.  $\underline{\quad} \times 11 = 77$

$$\underline{\quad} \times 7 = 77$$

$$77 \div \underline{\quad} = 11$$

$$\underline{\quad} \div 11 = 7$$

## On Your Own

Complete the related multiplication and division equations.

5.  $\underline{\quad} \times 12 = 84$

$$\underline{\quad} \times 7 = 84$$

$$\underline{\quad} \div 7 = 12$$

$$84 \div \underline{\quad} = 7$$

6.  $6 \times \underline{\quad} = 66$

$$11 \times \underline{\quad} = 66$$

$$66 \div 6 = \underline{\quad}$$

$$66 \div 11 = \underline{\quad}$$

7.  $12 \times 8 = \underline{\quad}$

$$8 \times \underline{\quad} = 96$$

$$96 \div \underline{\quad} = 8$$

$$96 \div 8 = \underline{\quad}$$

## Problem Solving



8. Megan cut 108 roses to make flower arrangements. She made 9 equal arrangements. How many roses were in each arrangement?

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9. Megan put 22 roses in a vase. She cut the same number of roses from each of 11 different bushes. How many roses did she cut from each bush?

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