

# Challenge

## Number Names

You can give a number different “names” by writing an expression. Look at the different ways you can write 16.

$$4 \times 4 \quad 2 \times 2 \times 4 \quad 32 \div 4 \times 2$$

Here are names for 16 that use the numbers 2, 4, and 8.

**Way 1:**  $8 \times 4 \div 2$

$$8 \times 4 = 32$$

$$32 \div 2 = 16$$

**Way 2:**  $4 \div 2 \times 8$

$$4 \div 2 = 2$$

$$2 \times 8 = 16$$

**Solve problems 1–5 using the following rules.**

- You can use only multiplication and division symbols.
- You can arrange the numbers in any order.
- You must use all the numbers given exactly once.

1. Find another name for 25 using the numbers 4, 4, 5, and 5. \_\_\_\_\_

2. Find another name for 28 using the numbers 2, 2, 9, and 63. \_\_\_\_\_

3. Find another name for 36 using the numbers 2, 3, and 6. \_\_\_\_\_

4. Find another name for 72 using the numbers 2, 6, 6, and 36. \_\_\_\_\_

5. Find another name for 100 using the numbers 2, 2, 5, and 5. \_\_\_\_\_

6. **Connect It** Does changing the order of numbers in exercise 5 affect the answer? Explain.

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$$2 \times 8 = 16$$

Solve problems 1–5 using the following rules.

- You can use only multiplication and division symbols.
- You can arrange the numbers in any order.
- You must use all the numbers given exactly once.

**Answers may vary.**

1. Find another name for 25 using the numbers 4, 4, 5, and 5.

$$\underline{5 \times 4 \times 5 \div 4}$$

2. Find another name for 28 using the numbers 2, 2, 9, and 63.

$$\underline{63 \div 9 \times 2 \times 2}$$

3. Find another name for 36 using the numbers 2, 3, and 6.

$$\underline{2 \times 3 \times 6}$$

4. Find another name for 72 using the numbers 2, 6, 6, and 36.

$$\underline{36 \div 6 \times 6 \times 2}$$

5. Find another name for 100 using the numbers 2, 2, 5, and 5.

$$\underline{5 \times 5 \times 2 \times 2}$$

6. **Connect It** Does changing the order of numbers in exercise 5 affect the answer? Explain.

**Sample response:** No, no matter how you rearrange the numbers, the answer will always be the same.

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