Find Unknown Factors

Learning Target: Find unknown factors.
Success Criteria:
- I can find an unknown factor in an equation.
- I can find an unknown factor in a non-equivalent statement.
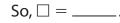
Think and Grow

Example Find the number that makes
$10 \times 3 = \square \times 6$ true.

How do you think division can help you solve this problem?

$10 \times 3 = \square \times 6$

$\underline{\hspace{1cm}} = \square \times 6$

$\underline{\hspace{1cm}} = \underline{\hspace{1cm}} \times 6$

So, $\square = \underline{\hspace{1cm}}$.

Example Find two numbers that
make $7 \times b < 63$ true.

Think: $7 \times \underline{\hspace{1cm}} = 63$

So, b must be less than $\underline{\hspace{1cm}}$.

Think: What numbers are less than 9?

What other numbers make this statement true?

So, $b = \underline{\hspace{1cm}}$ and

$b = \underline{\hspace{1cm}}$ make
the statement true.

Show and Grow

Find the number that makes the equation true.

1. $8 \times 2 = \triangle \times 4$

2. $3 \times g = 2 \times 9$

3. $12 \times 5 = 6 \times p$

Find two numbers that make the statement true.

4. $2 \times h < 8$

5. $45 < c \times 9$

6. $4 \times 6 > 12 \times r$

Practice

Find the number that makes the equation true.

7. $8 \times a = 4 \times 10$

8. ★ $\times 6 = 9 \times 4$

9. $8 \times 9 = k \times 12$

Find two numbers that make the statement true.

10. ♥ $\times 3 < 18$

11. $6 \times n > 12 \times 4$

12. $4 \times 5 > 10 \times d$

13. (MP) **Reasoning** Explain how you can use division to find the number that makes $5 \times m = 35$ true.

14. (MP) **Number Sense** Use each number once to write a statement that is true.

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} > 3 \times \underline{\hspace{1cm}}$$

| 2 | 4 | 6 |

15. (MP) **Structure** Which equation can you use to represent the problem?

"There are 4 batteries in a package. You need 8 batteries. How many packages do you need?"

$4 + p = 8$ 　　　 $4 + 8 = p$ 　　　 $4 \times 8 = p$ 　　　 $4 \times p = 8$

16. **Modeling Real Life** The total cost of 3 T-shirts is the same as the total cost of 2 pairs of shorts. Each T-shirt costs $8. How much does each pair of shorts cost?

17. **Modeling Real Life** You sell sandwiches for a fundraiser. Each sandwich costs $5. You want to raise more than $40. What is the least number of sandwiches you can sell to reach your goal? Explain.