

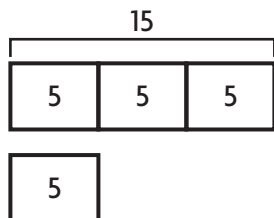
Name _____

Multiplication Comparisons

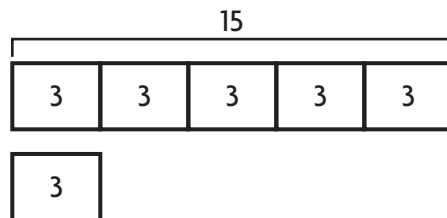
I Can use models and equations to solve multiplication comparisons.

You can use multiplication to compare amounts. For example, you can think of $15 = 3 \times 5$ as a comparison in two ways:

15 is 3 times as many as 5.



15 is 5 times as many as 3.



Florida's B.E.S.T.

- Algebraic Reasoning 4.AR.1.1, 4.AR.2.2
- Number Sense & Operations 4.NSO.2.1
- Mathematical Thinking & Reasoning MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1

Remember

The Commutative Property states that you can multiply two factors in any order and get the same product.

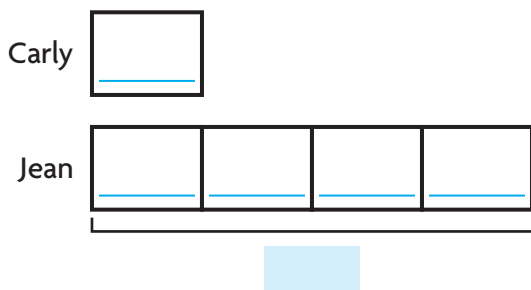


UNLOCK the Problem Real World

Carly has 9 pennies. Jean has 4 times as many pennies as Carly. How many pennies does Jean have?

Draw a model and write an equation to solve.

MODEL



So, Jean has _____ pennies.

- What do you need to compare?

RECORD

Use the model to write an equation and solve.

$$n = \underline{\quad} \times \underline{\quad}$$

$$n = \underline{\quad}$$

The value of n is 36.

Think: n is how many pennies Jean has.

- Explain how the equation for *4 is 2 more than 2* is different from the equation for *4 is 2 times as many as 2*.

Math Talk

MTR 4.1

Engage in discussions on mathematical thinking.

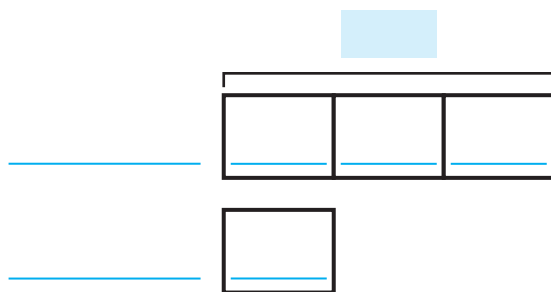
Describe what is being compared and explain how the comparison model relates to the equation.

Example Draw a model and write an equation to solve.

Miguel has 3 times as many rabbits as Sara. Miguel has 6 rabbits. How many rabbits does Sara have?

MODEL

Think: You don't know how many rabbits Sara has. Use n for Sara's rabbits.



So, Sara has 2 rabbits.

- How many rabbits does Miguel have? _____
- How many rabbits does Sara have? _____

RECORD

Use the model to write an equation and solve.

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

$$6 = 3 \times \underline{\hspace{1cm}} \quad \textbf{Think: 3 times what number equals 6?}$$

The value of n is 2.

Think: n is how many rabbits Sara has.

Try This! Write an equation to solve.

Rabbit food costs \$4 and dog food costs \$16. How many times as much does the dog food cost as the rabbit food?

How much does the rabbit food cost? _____

$$\underline{\hspace{1cm}} = \underline{\hspace{1cm}}^n \times \underline{\hspace{1cm}}$$

How much does the dog food cost? _____

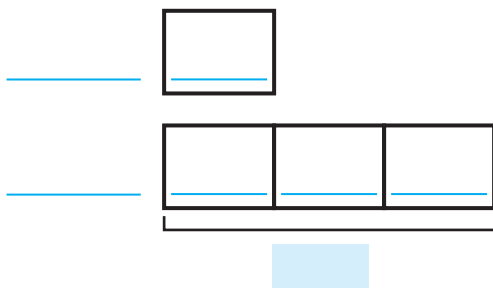
How many times as much does the dog food cost as the rabbit food?

The value of n is _____

Share and Show



- There are 8 students in the art club. There are 3 times as many students in chorus. How many students are in chorus?



So, there are _____ students in chorus.

Write an equation and solve.

$$24 = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$$

$$n = \underline{\hspace{1cm}}$$

The value of n is _____.



MTR 3.1 Complete tasks with mathematical fluency.

Explain how you could write the equation a different way.

Draw a model and write an equation.

2. 6 times as many as 2 is 12.

- ✓ 3. 20 is 4 times as many as 5.

Write a comparison sentence.

- 4.
- $108 = 9 \times 12$

_____ is _____ times as many as _____.

- ✓ 5.
- $8 \times 4 = 32$

_____ times as many as _____ is _____.

On Your Own**Write a comparison sentence.**

- 6.
- $5 \times 7 = 35$

_____ times as many as _____ is _____.

- 7.
- $99 = 11 \times 9$

_____ is _____ times as many as _____.

8. One week, Alexi and Silvia collected canned goods for a food drive. On Monday, Alexi collected 4 boxes and Silvia collected 2 boxes. At the end of the week, Alexi had 3 times as many boxes as he had on Monday. Silvia had 4 times as many boxes as she had on Monday. Together, how many boxes of canned goods did they have at the end of the week?

9. Cooper has 14 goldfish. Nando has 7 goldfish. Write an equation to show how many times as many goldfish Cooper has than Nando.

10. **MTR** Write a comparison sentence about pet food that could be represented using the equation $12 = 4 \times 3$.



UNLOCK the Problem Real World

11. Luca has 72 baseball cards. Han has 9 baseball cards. How many times as many baseball cards does Luca have as Han has?

a. What do you need to find? _____

b. How can you use a model to find the number of cards Han has?

c. Draw the model.

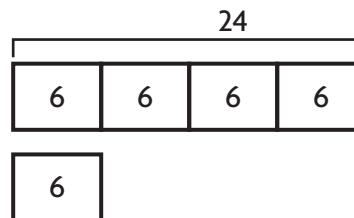
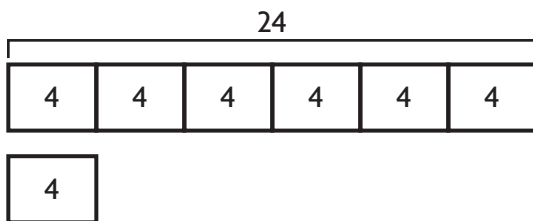
d. Write an equation and solve.

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

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

So, Luca has times as many baseball cards as Han has.

12. Complete the statements to describe each model.



24 is times as many as .

24 is times as many as .

Multiplication Comparisons

Go Online

Interactive Examples

Write a comparison sentence.

1. $6 \times 3 = 18$

6 times as many as 3 is 18.

2. $63 = 7 \times 9$

 is times as many as .

3. $5 \times 11 = 55$

 times as many as is .

4. $48 = 8 \times 6$

 is times as many as .**Write an equation.**

5. 2 times as many as 8 is 16.

6. 42 is 6 times as many as 7.

7. 3 times as many as 5 is 15.

8. 36 is 12 times as many as 3.

Problem Solving

9. Metin is 14 years old. Zeki is 7 years old.
How many times as old as Zeki is Metin?

10. There are 27 campers. This is nine times as many as the number of counselors. How many counselors are there?

11.  *Math* Draw a model, and write an equation to represent “4 times as many as 3 is 12.” Explain your work.

Lesson Check

12. Write an equation that represents this comparison sentence.

24 is 4 times as many as 6.

13. Write a comparison sentence that represents this equation.

$$5 \times 9 = 45$$

Spiral Review

14. Which symbol makes the following statement true?

547,098 574,908

15. What is the standard form for $200,000 + 80,000 + 700 + 6$?

16. Sean and Leona are playing a computer game. Sean scored 72,491 points. Leona scored 19,326 points more than Sean. How many points did Leona score?

17. A baseball stadium has 38,496 seats. Rounded to the nearest thousand, how many seats is this?
