LESSON MAKER PRO

Product Size Detectives

Compare products without multiplying.

GRADE 5 · 5.NF.B.5a

CCSS.Math.Content.5.NF.B.5a "Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication."

NAME _____ DATE _____

USE THE OTHER FACTOR

When you multiply a positive amount by a number less than 1, the product is smaller than that amount. Multiplying by 1 keeps the amount the same, and multiplying by a number greater than 1 makes the product larger.

WORKED EXAMPLE

Compare 3/5 x 14 to 14 without multiplying.

1. 3/5 is less than 1.
2. Multiplying 14 by a number less than 1 makes a smaller amount.
3. So, 3/5 x 14 < 14.

Answer: 3/5 x 14 is less than 14.

PRACTICE 6 problems

1 Without multiplying, compare 4/7 x 9 to 9. Write greater than, less than, or equal to.

ANSWER _____

2 Without multiplying, compare 11 x 8/7 to 11. Write greater than, less than, or equal to.

ANSWER _____

3 Without multiplying, compare 6/13 x 18 to 6/13. Write greater than, less than, or equal to.

ANSWER _____

4 Without multiplying, compare 1 x 12/17 to 12/17. Write greater than, less than, or equal to.

ANSWER _____

5 Without multiplying, compare 7/6 x 10 to 7/6. Write greater than, less than, or equal to.

ANSWER _____

6 Without multiplying, compare 8/15 x 1/2 to 1/2. Write greater than, less than, or equal to.

ANSWER _____

APPLY IT Show your work

1 Jalen earns 2/9 of the 27 possible points in a game round. Without multiplying, is Jalen's score greater than, less than, or equal to 27 points?

WORK SPACE

ANSWER _____

2 A video game bonus changes Priya's usual 24 coins to 13/12 x 24 coins. Without multiplying, is her new number of coins greater than, less than, or equal to 24 coins?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A number x is greater than 0 and less than 1. Without multiplying, compare 7/9 x x to 7/9. Explain your reasoning.

WORK SPACE AND ANSWER

ANSWER KEY

Product Size Detectives

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Without multiplying, compare 4/7 x 9 to 9. Write greater than, less than, or equal to.	**less than**
2	Without multiplying, compare 11 x 8/7 to 11. Write greater than, less than, or equal to.	**greater than**
3	Without multiplying, compare 6/13 x 18 to 6/13. Write greater than, less than, or equal to.	**greater than**
4	Without multiplying, compare 1 x 12/17 to 12/17. Write greater than, less than, or equal to.	**equal to**
5	Without multiplying, compare 7/6 x 10 to 7/6. Write greater than, less than, or equal to.	**greater than**
6	Without multiplying, compare 8/15 x 1/2 to 1/2. Write greater than, less than, or equal to.	**less than**

PART 2 · APPLY IT

1. **less than 27 points** Because 2/9 is less than 1, 2/9 x 27 is less than 27.
2. **greater than 24 coins** Because 13/12 is greater than 1, 13/12 x 24 is greater than 24.

CHALLENGE

7/9 x x is less than 7/9 because x is greater than 0 and less than 1, so multiplying by x makes the positive amount smaller.

Accept the words greater than, less than, and equal to, or correct inequality symbols. For the challenge, accept any explanation that identifies x as a number between 0 and 1 and states that the product becomes smaller.