LESSON 7.1

COMMON CORE STANDARD CC.5.NF.5a

Lesson Objective: Relate the size of the product to the factors when multiplying fractions greater than one.

Compare Mixed Number Factors and Products

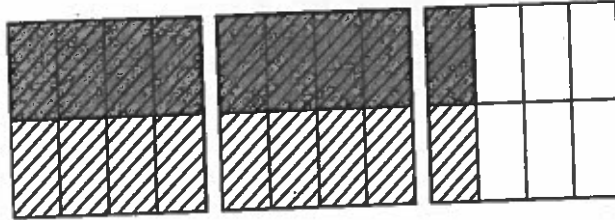Complete each statement with **equal to**, **greater than**, or **less than**.

$1 \times 1\frac{3}{4}$ is ___?___ $1\frac{3}{4}$.

The Identity Property of Multiplication states that the product of 1 and any number is that number. So, $1 \times 1\frac{3}{4}$ is __**equal to**__ $1\frac{3}{4}$.

$\frac{1}{2} \times 2\frac{1}{4}$ is ___?___ $2\frac{1}{4}$.

Draw three rectangles. Divide each rectangle into 4 equal columns.

Shade completely the first two rectangles and one column of the last rectangle to represent $\frac{1}{4}$.

Divide the rectangles into 2 rows. Shade one row to represent the factor $\frac{1}{2}$.

18 small rectangles are shaded. 9 rectangles have both types of shading. 9 rectangles is less than the 18 rectangles that represent $2\frac{1}{4}$.

So, $\frac{1}{2} \times 2\frac{1}{4}$ is __**less than**__ $2\frac{1}{4}$.

When you multiply a mixed number by a fraction less than 1, the product will be __**less than**__ the mixed number.

$1\frac{1}{4} \times 1\frac{3}{4}$ is ___?___ $1\frac{1}{4}$.

Use what you know about the product of two whole numbers greater than 1 to determine the size of the product of two mixed numbers.

So, $1\frac{1}{4} \times 1\frac{3}{4}$ is __**greater than**__ $1\frac{1}{4}$ and __**greater than**__ $1\frac{3}{4}$.

When you multiply two mixed numbers, their product is __**greater than**__ either factor.

Complete the statement with **equal to**, **greater than**, or **less than**.

1. $\frac{3}{5} \times 1\frac{2}{7}$ is _____ $1\frac{2}{7}$.

2. $\frac{6}{6} \times 3\frac{1}{3}$ is _____ $3\frac{1}{3}$.

3. $2\frac{1}{5} \times 1\frac{1}{4}$ is _____ $1\frac{1}{4}$.

4. $\frac{8}{9} \times 4\frac{3}{4}$ is _____ $4\frac{3}{4}$.

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Compare Mixed Number Factors and Products

Complete the statement with *equal to*, *greater than*, or *less than*.

1. $\frac{2}{3} \times 1\frac{5}{8}$ will be __**less than**__ $1\frac{5}{8}$.

   Think: $1 \times 1\frac{5}{8}$ is $1\frac{5}{8}$.
   Since $\frac{2}{3}$ is less than 1,
   $\frac{2}{3} \times 1\frac{5}{8}$ will be less than $1\frac{5}{8}$.

2. $\frac{5}{5} \times 2\frac{3}{4}$ will be _____ $2\frac{3}{4}$.

3. $3 \times 3\frac{2}{7}$ will be _____ $3\frac{2}{7}$.

4. $9 \times 1\frac{4}{5}$ will be _____ $1\frac{4}{5}$.

5. $1\frac{7}{8} \times 2\frac{3}{8}$ will be _____ $2\frac{3}{8}$.

6. $3\frac{4}{9} \times \frac{5}{9}$ will be _____ $3\frac{4}{9}$.

Problem Solving REAL WORLD

7. Fraser is making a scale drawing of a dog house. The dimensions of the drawing will be $\frac{1}{8}$ of the dimensions of the actual doghouse. The height of the actual doghouse is $36\frac{3}{4}$ inches. Will the dimensions of Fraser's drawing be equal to, greater than, or less than the dimensions of the actual dog house?

8. Jorge has a recipe that calls for $2\frac{1}{3}$ cups of flour. He plans to make $1\frac{1}{2}$ times the recipe. Will the amount of flour Jorge needs be equal to, greater than, or less than the amount of flour his recipe calls for?

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