Unit 6, Lesson 20

Will It Always Work?

Let's make generalizations about multiplying a whole number by a fraction.

Warm-up

True or False: Distributing

Decide if each statement is true or false. Be prepared to explain your reasoning.

- $\frac{3}{4} = 1 - \frac{1}{4}$

- $\left(1 - \frac{1}{4}\right) \times 9 = 9 - \left(\frac{1}{4} \times 9\right)$

- $\left(1 + \frac{1}{4}\right) \times 7 = (1 \times 7) + \frac{1}{4}$

Activity 1

True Statements

Write >, <, or = in each blank to make true statements.

Choose one problem to explain or show your reasoning.

1. $567 \_\_\_\_ 345 \times 567$

2. $\frac{4}{5} \times 851 \_\_\_\_ 851$

3. $\frac{1}{4} \_\_\_\_ \frac{5}{5} \times \frac{1}{4}$

4. $\frac{103}{104} \_\_\_\_ \frac{103}{104} \times \frac{103}{104}$

5. $\frac{99}{8} \times \frac{23}{22} \_\_\_\_ \frac{99}{8}$

6. $\frac{10}{10} \times \frac{1}{2} \_\_\_\_ \frac{1}{2}$

7. $\frac{100}{7} \times \frac{9}{13} \_\_\_\_ \frac{9}{13}$

Activity 2

Andre's Rules

Andre says:

- When you multiply any fraction by a number less than 1, the product will be less than the fraction.
- When you multiply any fraction by a number greater than 1, the product will be greater than the fraction.

Each partner chooses a different statement and describes why it is true. Show your thinking, using diagrams, symbols, or other representations.