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.

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

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

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

20.1: True Statements

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

Choose one problem and explain or show your reasoning.

1. 567 ____ 345×567

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

20.2: 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 choose one of the statements and describe why it is true. You may want to include details such as notes, diagrams, and drawings to help others understand your thinking.

_____

_____