

Name _____ Date _____



5th Grade: 5.NF.5: Interpret multiplication as scaling (resizing), by:

a. 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.

b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

1. Given the following equation: $6 \times \frac{3}{4}$, which of the statements below is true.

- a) Since $\frac{3}{4}$ is less than 1, the answer will be less than 6.
- b) Since $\frac{3}{4}$ is less than 1, the answer will be more than 6
- c) Since $\frac{3}{4}$ is more than 1, the answer will be less than 6
- d) Since $\frac{3}{4}$ is more than 1, the answer will be more than 6

2. Given the following equation: $7 \times \frac{2}{3}$, which of the statements below is true.

- a) Since $\frac{2}{3}$ is more than 1, the answer will be more than 7
- b) Since $\frac{2}{3}$ is more than 1, the answer will be less than 7
- c) Since $\frac{2}{3}$ is less than 1, the answer will be more than 7
- d) Since $\frac{2}{3}$ is less than 1, the answer will be less than 7

3. Given the following equation: $5 \times \frac{3}{2}$, which of the statements below is true.

- a) Since $\frac{3}{2}$ is more than 1, the answer will be less than 5
- b) Since $\frac{3}{2}$ is more than 1, the answer will be more than 5
- c) Since $\frac{3}{2}$ is less than 1, the answer will be less than 5
- d) Since $\frac{3}{2}$ is less than 1, the answer will be more than 5

4. Given the following equation: $3 \times 9\frac{4}{7}$, which of the statements below is true.

- a) Since $9\frac{4}{7}$ is less than 1, the answer will be more than 3
- b) Since $9\frac{4}{7}$ is less than 1, the answer will be less than 3
- c) Since $9\frac{4}{7}$ is more than 1, the answer will be more than 3
- d) Since $9\frac{4}{7}$ is more than 1, the answer will be less than 3

5. Given the following equation: $2 \times \frac{1}{8}$, which of the statements below is true.
- a) Since $\frac{1}{8}$ is less than 1, the answer will be less than 2.
 - b) Since $\frac{1}{8}$ is less than 1, the answer will be more than 2.
 - c) Since $\frac{1}{8}$ is more than 1, the answer will be less than 2.
 - d) Since $\frac{1}{8}$ is more than 1, the answer will be more than 2.

6. How Much Flour?

Each day from Monday through Friday a baker uses $1\frac{1}{4}$ sacks of flour when baking cakes for his bakery.

- a) Will the baker use more than or less than 5 sacks of flour from Monday through Friday? Explain your answer without solving the problem.
- b) Prove your answer to Part A by calculating the number of sacks of flour the baker will use from Monday through Friday. Show your work

7. London to Paris

A high speed train travels at 300km per hour from London to Paris. If the train traveled at $\frac{7}{8}$ times that speed, would the amount of time the trip takes be shorter or longer? Explain your thinking.