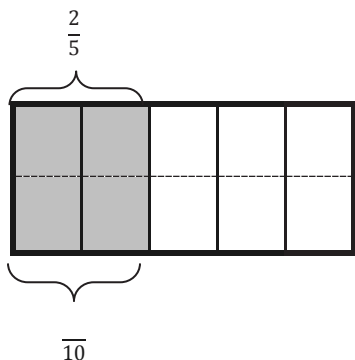


Name _____

Date _____

1. Each rectangle represents 1. Draw horizontal lines to decompose each rectangle into the fractional units as indicated. Use the model to give the shaded area as a sum and as a product of unit fractions. Use parentheses to show the relationship between the number sentences. The first one has been partially done for you.

a. Tenths



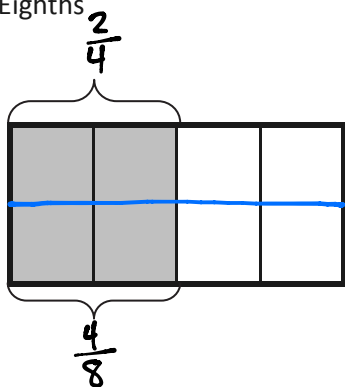
$$\frac{2}{5} = \frac{4}{10}$$

$$\frac{1}{5} + \frac{1}{5} = \left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = \frac{4}{10}$$

$$\left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = \left(2 \times \frac{1}{10}\right) + \left(2 \times \frac{1}{10}\right) = \frac{4}{10}$$

$$\frac{2}{5} = 4 \times \frac{1}{10} = \frac{4}{10}$$

b. Eighths



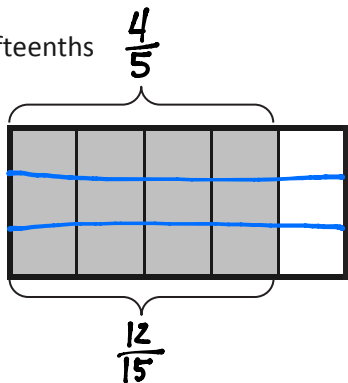
$$\frac{2}{4} = \frac{4}{8}$$

$$\frac{1}{4} + \frac{1}{4} = \left(\frac{1}{8} + \frac{1}{8}\right) + \left(\frac{1}{8} + \frac{1}{8}\right) = \frac{4}{8}$$

$$\left(\frac{1}{8} + \frac{1}{8}\right) + \left(\frac{1}{8} + \frac{1}{8}\right) = \left(2 \times \frac{1}{8}\right) + \left(2 \times \frac{1}{8}\right) = \frac{4}{8}$$

$$\frac{2}{4} = 4 \times \frac{1}{8} = \frac{4}{8}$$

c. Fifteenths



$$\frac{4}{5} = \frac{12}{15}$$

$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) = \frac{12}{15}$$

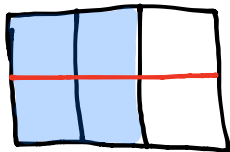
$$\left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right) + \left(\frac{1}{15} + \frac{1}{15} + \frac{1}{15}\right)$$

$$= \left(3 \times \frac{1}{15}\right) + \left(3 \times \frac{1}{15}\right) + \left(3 \times \frac{1}{15}\right) + \left(3 \times \frac{1}{15}\right) = \frac{12}{15}$$

$$\frac{4}{5} = \left(12 \times \frac{1}{15}\right) = \frac{12}{15}$$

2. Draw area models to show the decompositions represented by the number sentences below. Express each as a sum and product of unit fractions. Use parentheses to show the relationship between the number sentences.

a. $\frac{2}{3} = \frac{4}{6}$



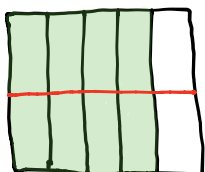
$$\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$$

$$\frac{2}{3} = \left(\frac{1}{6} + \frac{1}{6}\right) + \left(\frac{1}{6} + \frac{1}{6}\right) = \frac{4}{6}$$

$$\frac{2}{3} = (2 \times \frac{1}{6}) + (2 \times \frac{1}{6}) = \frac{4}{6}$$

$$\frac{2}{3} = 4 \times \frac{1}{6} = \frac{4}{6}$$

b. $\frac{4}{5} = \frac{8}{10}$



$$\frac{4}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$$

$$\frac{4}{5} = \left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = \frac{8}{10}$$

$$\frac{4}{5} = (2 \times \frac{1}{10}) + (2 \times \frac{1}{10}) + (2 \times \frac{1}{10}) + (2 \times \frac{1}{10}) = \frac{8}{10}$$

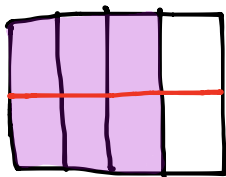
$$\frac{4}{5} = 8 \times \frac{1}{10} = \frac{8}{10}$$

3. Step 1: Draw an area model for a fraction with units of thirds, fourths, or fifths.

Step 2: Shade in more than one fractional unit.

Step 3: Partition the area model again to find an equivalent fraction.

Step 4: Write the equivalent fractions as a number sentence. (If you have written a number sentence like this one already in this homework, start over.)



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

$$\frac{3}{4} = \left(\frac{1}{8} + \frac{1}{8}\right) + \left(\frac{1}{8} + \frac{1}{8}\right) + \left(\frac{1}{8} + \frac{1}{8}\right)$$

$$\frac{3}{4} = (2 \times \frac{1}{8}) + (2 \times \frac{1}{8}) + (2 \times \frac{1}{8})$$

$$\frac{3}{4} = 6 \times \frac{1}{8}$$

$$\frac{3}{4} = \frac{6}{8}$$

ANSWERS WILL VARY