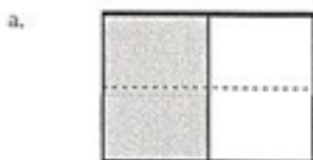


Name Jack

Date \_\_\_\_\_

Each rectangle represents 1 whole.

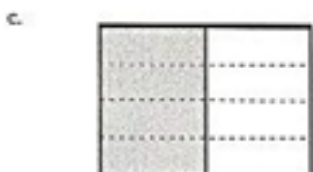
1. The shaded unit fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.



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



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

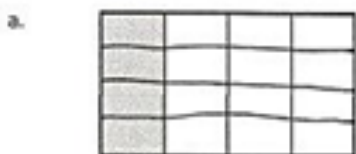


$$\frac{1}{2} = \frac{1 \times 4}{2 \times 4} = \frac{4}{8}$$



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

2. Decompose the shaded fractions into smaller units using the area models. Express the equivalent fractions in a number sentence using multiplication.



$$\frac{1}{4} = \frac{1 \times 4}{4 \times 4} = \frac{4}{16}$$



$$\frac{1}{5} = \frac{1 \times 3}{5 \times 3} = \frac{3}{15}$$



$$\frac{1}{6} = \frac{1 \times 3}{6 \times 3} = \frac{3}{18}$$



$$\frac{1}{7} = \frac{1 \times 2}{7 \times 2} = \frac{2}{14}$$

- e. What happened to the size of the fractional units when you decomposed the fraction?

*When I decomposed the fraction, the size of the fractional units got smaller.*

- f. What happened to the total number of units in the whole when you decomposed the fraction?

*Decomposing the fraction increased the number of units in the whole.*

3. Draw three different area models to represent  $\frac{1}{3}$  by shading. Decompose the shaded fraction into (a) sixths, (b) ninths, and (c) twelfths. Use multiplication to show how each fraction is equivalent to  $\frac{1}{3}$ .

a.



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

b.



$$\frac{1}{3} = \frac{1 \times 3}{3 \times 3} = \frac{3}{9}$$

c.



$$\frac{1}{3} = \frac{1 \times 4}{3 \times 4} = \frac{4}{12}$$