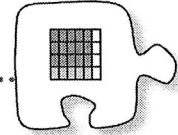


5.1.2 How big is it?

Describing Parts of Parts



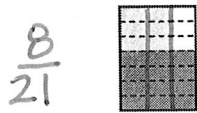
5-9 Grant, Oliver, and Sonya were working on the problem below.

Jenny's house is $\frac{4}{7}$ of a mile from the bus stop. If Jenny had to run $\frac{2}{3}$ of the way from her house to the bus stop, what portion of a mile did Jenny run?



They each started by visualizing $\frac{4}{7}$ in their own way. Their diagrams are below.

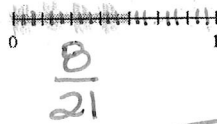
Grant's Drawing



Oliver's Drawing:



Sonya's Drawing:



- Work with your team to figure out how to use each diagram to show $\frac{2}{3}$ of $\frac{4}{7}$.
- Which of the drawings does your team prefer? Why?
- What fraction of a whole is $\frac{2}{3} \cdot \frac{4}{7}$?

5-10 PARTS OF PARTS: Part One: For each of the parts of parts described below, work with your team to figure out what part of the whole is described. For each problem, show at least one picture or diagram that helps you make sense of the problem.

a) $\frac{3}{5}$ of $\frac{2}{7}$

b) $\frac{1}{2}$ of $\frac{1}{10}$

5-11 Grace and William were wondering if one half of a quarter would be the same as one quarter of a half. "But half of something is 50% and a quarter is the same as 25%, so if that's true, then 25% of 50% should be the same as 50% of 25%. Something seems wrong with that to me," Grace said. Investigate Grace and William's question by completing parts (a) through (c) below.

- Draw a picture that shows one half of one fourth.
- Draw a picture that shows one fourth of one half.
- Write a note to Grace and William explaining how these two values compare and why the result makes sense.

How-To Notes:
 • Find $\frac{2}{3}$ of each section.
 • The "double" shaded is the numerator.
 • The total pieces is the denominator.

b) Our beco

c) Jen

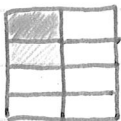
5-10

a)

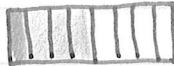


5-11

a)



b)



c) the values are equivalent because you can multiply in any order.

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

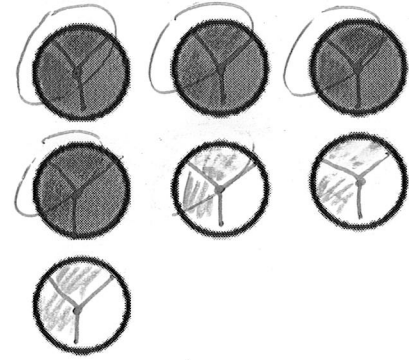
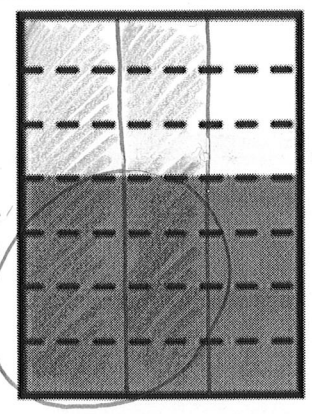
How-To

NOTES:

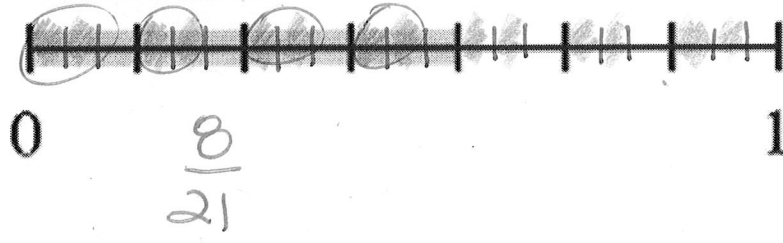
- Find $\frac{1}{3}$ of each section.
- The "double" shaded is the numerator.
- The total pieces is the denominator.

5-9

a)



$$\frac{8}{9}$$



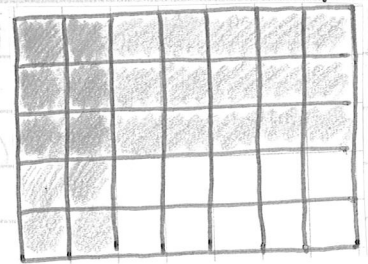
b) Our team prefers _____'s diagram because...

c) Jenny ran $\frac{8}{21}$ of a mile.

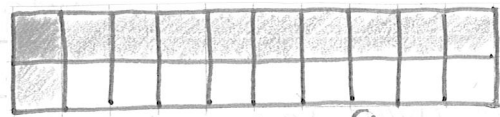
5-10

a)

$$\frac{6}{35}$$



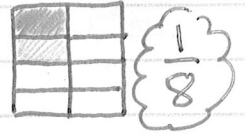
b)



$$\frac{1}{2} \cdot \frac{1}{10} = \frac{1}{20}$$

5-11

a)



$$\frac{1}{4}$$

b)



$$\frac{1}{8}$$

c) These values are equivalent because you can multiply in any order.

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