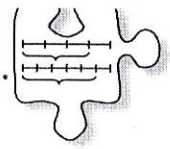
— Dividing Fractions —

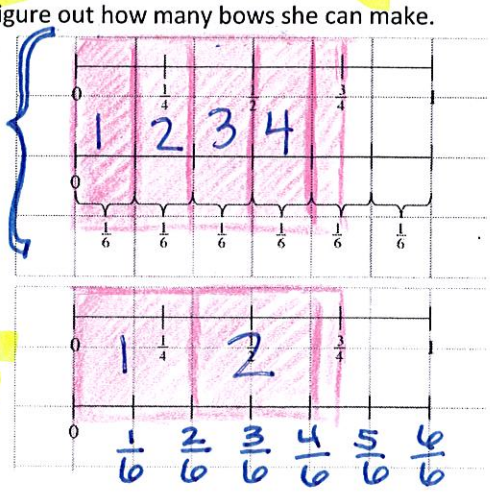
7.2.1 How can I calculate it?

Analyzing Strategies for Dividing Fractions



7-35

7-35. Jill is making hair bows for her nieces. She wants to know how many bows could be cut from the ribbon she has that is $\frac{3}{4}$ of a yard long. Each bow takes $\frac{1}{6}$ of a yard of ribbon. She wonders how she can figure out how many bows she can make. She drew the diagram to the right.



a) Work with your team to make sense of Jill's diagram. How many bows can Jill make? Show or explain your thinking.

7-36

b) What if each bow required $\frac{2}{6}$ of a yard instead? Use the copy of Jill's diagram to the right to estimate the number of bows that she can make. Show or explain your thinking.

7-36. Jill has just moved to the country and she is planning the path she will take to walk to her new school. She used the Internet and found out that her path will be $\frac{3}{4}$ of a mile long. When Jill lived in the city, her walk to school was $\frac{3}{5}$ of a mile long. She knows that her path to school is longer now, but she wants to figure out how many times longer it is. She sets up the problem like this: $\frac{3}{5} \times ? = \frac{3}{4}$

7-40

a) How can Jill use division to solve her problem? Write a division number sentence.

b) Use any strategy to solve Jill's problem. How many times longer is her new walk to school?

7-40. Use any strategy to find the following quotients: simplify!

a) $\frac{3}{4} \div \frac{7}{12}$ b) $\frac{12}{5} \div \frac{3}{10}$ c) $\frac{3}{7} \div \frac{4}{5}$

7-41

7-41. When asked the question, "*How many $\frac{3}{4}$ cup servings of yogurt are in $\frac{2}{3}$ cup?*" some of Jill's teammates answered, "*None.*"

a) Write a division sentence that matches this problem.

b) Is the answer actually zero? Explain.

7-35 a) Jill can make 4 bows with some ribbon left over.

b) Jill can make 2 bows with some ribbon left over.

7-36 a) $\frac{3}{4} \div \frac{3}{5}$ Jill can divide to solve her problem.

b) $\frac{3}{4} \times \frac{5}{3} = \frac{15}{12} = \frac{5}{4} = 1\frac{1}{4}$ Her new walk to school is $1\frac{1}{4}$ times longer.

7-40 a) $\frac{3}{4} \times \frac{12}{7} = \frac{36}{28} = \boxed{\frac{9}{7} = 1\frac{2}{7}}$

b) $\frac{12}{5} \times \frac{10}{3} = \frac{120}{15} = \frac{24}{3} = \boxed{\frac{8}{1} = 8}$

c) $\frac{3}{7} \times \frac{5}{4} = \boxed{\frac{15}{28}}$

7-41 a) $\frac{2}{3} \div \frac{3}{4}$

b) $\frac{2}{3} \times \frac{4}{3} = \frac{8}{9}$

The answer is not zero, but it is less than 1 serving. There is $\frac{8}{9}$ of a serving.