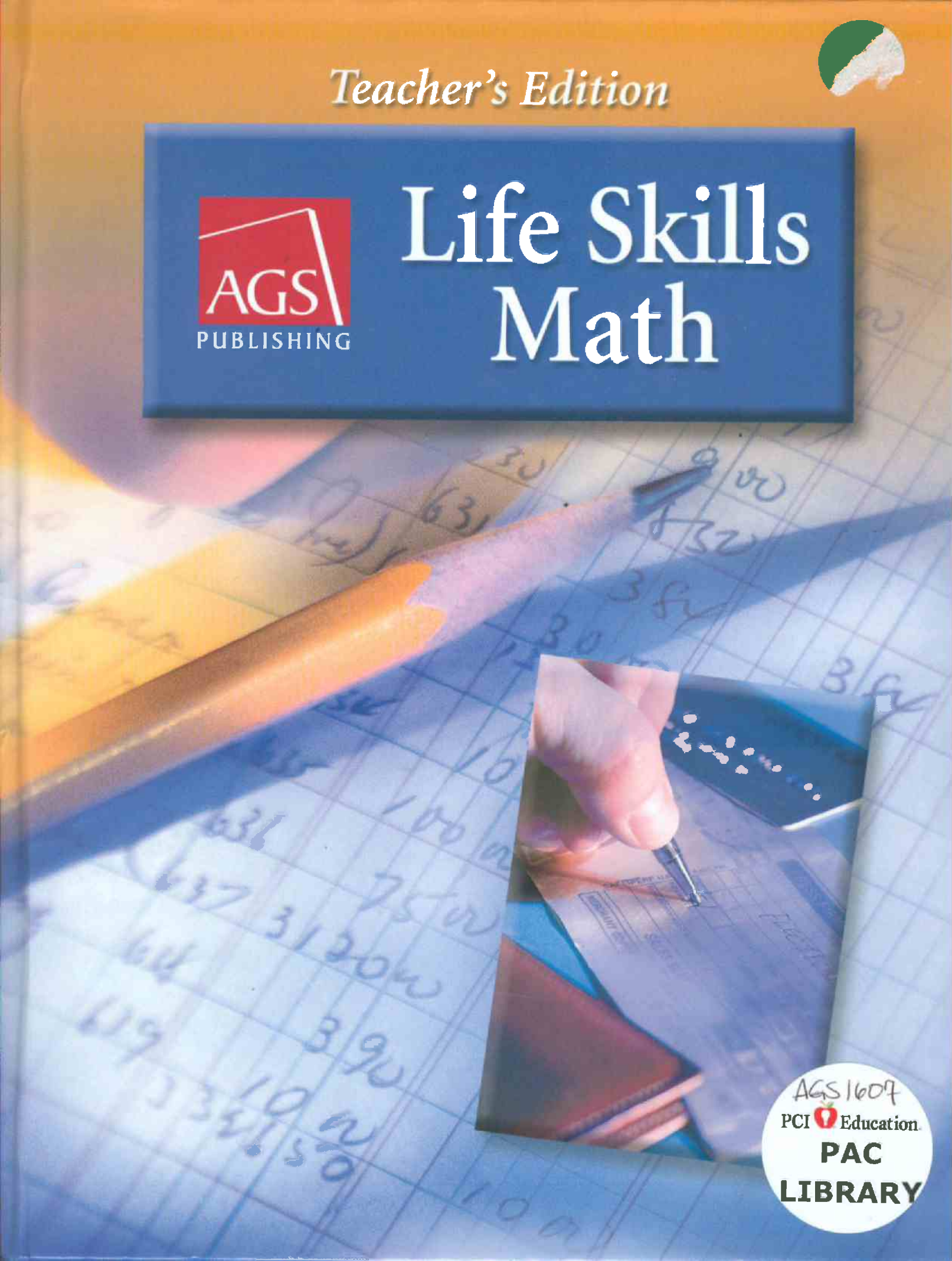


Teacher's Edition



Life Skills Math



AGS 1607
PCI Education
PAC
LIBRARY

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2

Home Improvement

The Jung family supplements their income by buying an old house, making repairs, and then reselling the house. Typical repairs include installing new carpet, replacing old flooring, and repainting or wallpapering walls. The Jungs save money by watching for sales and by doing the work themselves. They use mathematics to determine how much carpet, how many rolls of wallpaper, or how many boxes of tiles they need to buy.

In Chapter 2, you will learn how to determine how many double rolls of wallpaper to buy for a project. You will find that there is sometimes a way to position carpet that is cheaper than another way.

Goals for Learning

- ◆ To compute the surface area of a room
- ◆ To find area in square yards when given the dimensions in feet
- ◆ To find the cost of tiling a room, given the dimensions of the room and cost of tiles
- ◆ To apply a rule for estimating the cost of wallpaper for a room

Introducing the Chapter

Bring to class or ask students to bring several samples of paint chips, floor tiles, carpet scraps, and wallpaper samples. Hardware stores are often willing to part with outdated samples. Have students look over the samples and think about how they might like to redecorate a room at home or at school. Explain that to buy a sufficient amount of supplies, being able to calculate the surface area of the walls and floor is essential. Tell students that this chapter will help them apply the mathematical concepts required to make these calculations.

CHAPTER PROJECT



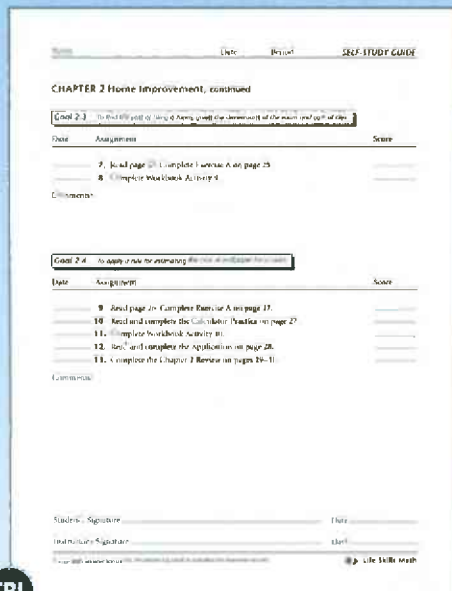
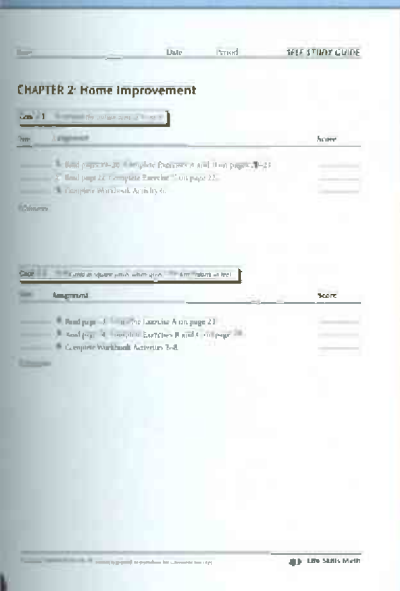
Identify a room or wall in the school or other municipal building that needs repainting. Work with student groups to calculate the surface area to be painted. Help them research prices, determine cost, and find the best buy to complete the project. Assign groups to write a short essay describing the project.

TEACHER'S RESOURCE

The AGS Teaching Strategies in Math Transparencies may be used with this chapter. The transparencies add an interactive dimension to expand and enhance the *Life Skills Math* program content.

CAREER INTEREST INVENTORY

The AGS Harrington-O'Shea Career Decision-Making System-Revised (CDM) may be used with this chapter. Students can use the CDM to explore their interests and identify careers. The CDM defines career areas that are indicated by students' responses on the inventory.



■ Presenting Exercise E

Students should use the Activity 11 worksheet in the Teacher's Resource Library to complete Exercise E.

MENTAL MATH



Remind students that sums of 10 can be found by using mental math. You may wish to review addition facts that equal 10.

COMMON ERROR



Some students may not realize why a blank is left at the top in the second frame in the first example on student page 38. Explain that if a bowler knocks down all the pins on the first roll (a strike), the player does not take a second roll.

LEARNING STYLES



LEP/ESL

Some students may need to verbalize how to account for a strike. Have students explain the first example. Ask them why no score is recorded in the second frame, but by the third frame, a score of 27 is in the second frame. Ask students to explain why extra rolls are needed in the tenth frame if a strike is bowled.

EXAMPLES

1st frame: 1st roll 3
2nd roll 5

1	2	3
3	5	
8		

2nd frame: 1st roll 10
2nd roll —

1	2	3
3	5	X
8		

3rd frame: 1st roll 7
2nd roll 2

1	2	3
3	5	X
8	27	36

Felicia's score is 96 for the sixth frame. Her game continues as shown.

7th frame: 1st roll 10
2nd roll —

8th frame: 1st roll 3
2nd roll 7

9th frame: 1st roll 6
2nd roll 3

10th frame: 1st roll 10
2nd roll —

1st extra roll 10
2nd extra roll 9

6	7	8	9	10
X	X	3	6 3	X
96	116	132	141	170

ALTERNATIVE ASSESSMENT

Alternative Assessment items correlate with student Goals for Learning at the beginning of this chapter.

- Have students rename an improper fraction to a mixed number in simplest form.

Write a paragraph explaining how to rename the improper fraction $\frac{12}{8}$ as a mixed number. Include an explanation of how to express the mixed number in simplest form.

- Have students convert units of measure to equivalent measures.

Copy the following conversions. Fill in the blank to make each statement true. Draw pictures to demonstrate each conversion.

1 cup = _____ tablespoons (16)

3 quarts = _____ pints (6)

12 quarts = _____ gallons (3)

6 tablespoons = _____ ounces (3)

- Have students adjust recipes by multiplying and dividing fractions and mixed numbers.

Look at problem 1 on page 80. Write a paragraph explaining how each ingredient amount was decreased to make 8 rolls instead of 40 rolls.

Find the answers.

- What is $\frac{2}{3}$ cup chopped nuts multiplied by 6? **4 cups**
- Rename $\frac{5}{3}$ teaspoons cream as a mixed number. **$1\frac{2}{3}$ tsp**
- How many cups are equal to 4 pints? **8 cups**
- Neal's banana bread recipe calls for 4 bananas and serves 6 people. How many bananas does he need to serve 48? **32 bananas**
- Rename $\frac{8}{5}$ tablespoons butter as a mixed number. **$1\frac{3}{5}$ tablespoons**
- Rename $2\frac{3}{4}$ cups milk as an improper fraction. **$\frac{11}{4}$ cups**
- Sandra's spaghetti sauce recipe calls for $3\frac{1}{5}$ cups tomato paste to serve 8. How much tomato paste is needed to serve 16? **$6\frac{2}{5}$ cups**
- Convert 3 ounces of juice to tablespoons. **6 tablespoons**
- A recipe that serves 12 people calls for 4 cups of milk. How many cups of milk are needed for a recipe that serves 9 people? **3 cups**
- How many pints are in 1 quart? **2 pints**
- Convert 6 cups of water to pints. **3 pints**
- Wanda plans to have a party for 12 people. She found a dessert recipe that calls for $4\frac{1}{2}$ cups of milk, but the recipe serves only 8 people. How many cups of milk will Wanda need if she makes that dessert? **$6\frac{3}{4}$ cups**

Name _____ Date _____ Period _____

Mastery Test B, Page 1
Chapter 5

Chapter 5 Mastery Test B

DIRECTIONS: Find the answers. Write the answers in the boxes on the lines.

- Also adjusting a recipe, Brenda needs $\frac{2}{3}$ cup of flour.
What is the simplest form of the fraction $\frac{2}{3}$?
A. $\frac{2}{3}$ B. $\frac{4}{6}$ C. $\frac{1}{3}$ D. $\frac{1}{6}$
- John's pizza recipe calls for $1\frac{1}{2}$ cups of pepperoni.
What is the simplest form of $1\frac{1}{2}$?
A. $1\frac{1}{2}$ B. $1\frac{2}{4}$ C. $2\frac{1}{2}$ D. $1\frac{3}{4}$
- What is $\frac{1}{2}$ cup of chopped nuts multiplied by 6?
A. 3 cups B. 2 cups C. 3 cups D. $\frac{1}{3}$ cup
- What is $\frac{1}{3}$ of 3 tablespoons of olive pepper?
A. $\frac{1}{9}$ cup B. $\frac{2}{9}$ cup C. $\frac{1}{3}$ cup D. $\frac{2}{3}$ cup
- Rename $\frac{5}{3}$ teaspoons of cream as a mixed number.
A. $1\frac{2}{3}$ tsp B. $1\frac{1}{3}$ tsp C. $1\frac{1}{2}$ tsp D. $1\frac{1}{6}$ tsp

DIRECTIONS: Find the answers. Write the answers in the boxes on the lines.

- What is $\frac{1}{2}$ of 2 teaspoons of sugar?
- Rename $\frac{8}{5}$ cups of butter as a mixed number.
- Multiply $\frac{1}{2}$ by $\frac{1}{3}$ cup of flour.
- Simplify $\frac{1}{2}$ tablespoons of juice, powder.
- What is $\frac{1}{2}$ ounce of butter multiplied by $\frac{1}{2}$?

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Name _____ Date _____ Period _____

Mastery Test B, Page 2
Chapter 5

Chapter 5 Mastery Test B, continued

- Rename an improper fraction: $\frac{11}{4}$ cups of milk. _____
- How many ounces do 1 tablespoon equal? _____
- How many gallons do 8 quarts equal? _____
- John found a recipe that for 8 cups of flour (how much flour) will be used if she needs only 4 cups of flour? _____
- Try to make a recipe which requires $\frac{1}{2}$ cup of flour. How much flour will be needed for a size that serves 12? _____
- How many pints are in 5 cups? _____
- Marla wants to serve 9 people. Her recipe serves 12 calls for 4 cups of milk. How much milk will be needed? _____
- How many cups of sugar are in 16 tablespoons? _____
- How many cups are in a gallon? _____
- Rename $\frac{1}{2}$ cups of flour as an improper fraction. _____

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Exercise A Complete the information for this chart for the lawn mower.

Month	Previous Balance	Finance Charge	Before Payment	Monthly Payment	New Balance
Jan.	\$132.00	\$—	\$132.00	\$20.00	\$112.00
Feb.	\$112.00	\$1.96	\$113.96	\$20.00	\$93.96
March	\$93.96	\$1.64	\$95.60	\$20.00	\$75.60
April	\$75.60	\$1.32	\$76.92	\$20.00	\$56.92
May	\$56.92	\$1.00	\$57.92	\$20.00	\$37.92
June	\$37.92	\$0.66	\$38.58	\$20.00	\$18.58
July	\$18.58	\$0.33	\$18.91	\$18.91	\$0.00



When you use a credit card to make a purchase, you will receive a monthly statement. It shows the balance due and any finance charges that you owe.

COMMON ERROR



Some students may be unable to determine or describe the pattern in the chart in Exercise A. Discuss where the data in the first column will come from (*the last column*) before they begin the exercise.

3 Reinforce and Extend

MENTAL MATH



Have students mentally subtract the monthly payment from the amount in the Before Payment column.

LEARNING STYLES



Auditory/Verbal

Some students may benefit from hearing each step they need to follow to find the missing information in the problems in this lesson. Consider asking students to record the steps on a tape recorder and listen with headphones as they solve the problems in this lesson.

CALCULATOR



You may wish to have students use calculators when completing the chart in Exercise A.

Fractions

Comparing Fractions

Example Compare $\frac{3}{4}$ and $\frac{5}{8}$.

Solution $\frac{24}{4}$ $\frac{20}{8}$
Because $4 \times 5 = 20$ Because $3 \times 8 = 24$

24 is greater than 20; therefore,
 $\frac{3}{4}$ is greater than $\frac{5}{8}$.

Changing Fractions to Higher Terms

Example Write $\frac{5}{6}$ as a fraction with 30 as the new denominator.

Solution Step 1 $\frac{5}{6} = \frac{\square}{30}$

Step 2 Divide 30 by 6. $\rightarrow 6 \overline{)30}$

Step 3 Multiply $\frac{5}{6}$ by $\frac{5}{5}$. $\rightarrow \frac{5 \times 5}{6 \times 5} = \frac{25}{30}$

Answer $\frac{5}{6} = \frac{25}{30}$

Exercise Express these fractions in higher terms.

1. $\frac{3}{4} = \frac{\square}{48}$ 36

8. $\frac{5}{12} = \frac{\square}{24}$ 10

15. $\frac{3}{10} = \frac{\square}{30}$ 9

2. $\frac{1}{3} = \frac{\square}{21}$ 7

9. $\frac{3}{7} = \frac{\square}{21}$ 9

16. $\frac{12}{14} = \frac{\square}{70}$ 60

3. $\frac{2}{3} = \frac{\square}{15}$ 10

10. $\frac{4}{12} = \frac{\square}{36}$ 12

17. $\frac{9}{12} = \frac{\square}{144}$ 108

4. $\frac{5}{6} = \frac{\square}{18}$ 15

11. $\frac{4}{9} = \frac{\square}{45}$ 20

18. $\frac{5}{15} = \frac{\square}{45}$ 15

5. $\frac{7}{8} = \frac{\square}{56}$ 49

12. $\frac{3}{3} = \frac{\square}{18}$ 18

19. $\frac{2}{8} = \frac{\square}{96}$ 24

6. $\frac{3}{5} = \frac{\square}{20}$ 12

13. $\frac{2}{11} = \frac{\square}{121}$ 22

20. $\frac{1}{6} = \frac{\square}{72}$ 12

7. $\frac{1}{7} = \frac{\square}{49}$ 7

14. $\frac{15}{16} = \frac{\square}{48}$ 45

21. $\frac{17}{24} = \frac{\square}{120}$ 85