Name _____ Date _____ Class _____

SKILL 19: PROBLEM SOLVING: Operations with Fractions and Mixed Numbers

When you solve problems with fractions and mixed numbers, you will have to choose the operations needed to solve the problem.

Example

Renee uses $2\frac{2}{3}$ packets of seeds to plant 4 rows of corn. What fraction of a single packet did she use to plant one row?

Read Renee uses $2\frac{2}{3}$ packets of seeds to plant 4 rows of corn.

Plan Divide the number of packets of seeds used by the number of rows of corn Renee planted.

Solve $2\frac{2}{3} \div 4 = \frac{8}{3} \div \frac{4}{1}$

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

$= \frac{8}{12}$

$= \frac{2}{3}$

Renee used $\frac{2}{3}$ packet of seeds to plant one row.

Look Back Estimate the quotient to decide whether the answer is reasonable. Round $\frac{2}{3}$ to 1, so $2\frac{2}{3}$ rounds to 3. Estimate $2\frac{2}{3} \div 4$ as $3 \div 4 = \frac{3}{4}$. Since $\frac{2}{3}$ is close to $\frac{3}{4}$, the answer is reasonable.

Guided Practice

1. Cassie planted 9 rows of lettuce with $4\frac{1}{2}$ packets of seeds. How many rows did she plant with each packet of seeds?
   a. How can you find the number of rows she plants with each packet of seeds?

   _____

   b. Solve the problem. _____

2. Dave used one packet of cucumber seeds to sow $\frac{5}{8}$ row of cucumbers. How many rows of cucumbers can he plant with 4 packets of seeds?
   a. How can you find the total number of rows? _____

   _____

   b. Solve the problem. _____

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SKILL 19: Practice

Solve each problem.

1. A recipe for papaya ice cream calls for $\frac{1}{4}$ cup of lemon juice and $1\frac{1}{2}$ cups of ripe papaya. How much of each ingredient is needed to make $\frac{1}{2}$ of the recipe? _____

2. There are 48 people who have signed up to attend the midnight barbecue at the Rainbow Canyon Recreation Center. The chef wants to make enough burgers so that each person can have $1\frac{1}{2}$ burgers.
   a. How many burgers should he make? _____
   b. He uses $\frac{1}{4}$ pound of beef in each burger. How much ground beef should he order? _____

3. Marvin can do one load of laundry with $\frac{1}{16}$ box of laundry detergent. How many loads of laundry can he wash with 4 boxes of the detergent? _____

4. Adriana cuts 4 apples into eighths and 3 pears into sixths to make a fruit salad. How many pieces of apple and pear does she have in the salad? _____

5. There are 12 swings at the park. Of the swings, $\frac{3}{4}$ have plastic seats. One third of the plastic seats are green. How many of the swings have green seats? _____

6. Pietro used an eight-foot board to cut 3 shelves. Each shelf was $2\frac{1}{2}$ feet long.
   a. How much board did the 3 shelves use? _____
   b. How much, if any, wood did Pietro have left? _____

TEST PREP

7. Melissa has a piece of ribbon that is $1\frac{2}{3}$ feet long. She wants to cut it into 10 pieces, each the same length. How long should she cut each piece of the ribbon? *Skill 19*

   A $\frac{1}{6}$ ft **C** $\frac{1}{3}$ ft

   B $\frac{1}{5}$ ft **D** 6 ft

8. Austin takes 1 quart of water on his hike. He drinks $\frac{1}{3}$ of the water going up the trail. He drinks $\frac{1}{4}$ of the water when he stops for lunch. How much water does he have left? *Skill 8*

   F $\frac{2}{7}$ qt **H** $\frac{5}{12}$ qt

   G $\frac{5}{7}$ qt **J** $\frac{7}{12}$ qt