Name: _____ Date: _____

Multiplying and Dividing Fractions and Mixed Numbers

PROBLEM SOLVING

Thinking Skills

Solve. Show your work.

1. Find the fraction that is exactly halfway between $\frac{1}{6}$ and $1\frac{1}{3}$.

2. A tiger is $\frac{7}{8}$ meter tall. A koala bear is $\frac{4}{7}$ as tall as the tiger. A penguin is $\frac{7}{8}$ as tall as the koala bear. What is the height of the penguin? Write your answer as a fraction.

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3. A rectangular tank is $\frac{5}{9}$ full of water. If $6\frac{3}{4}$ liters of water are poured into the tank, it will be $\frac{2}{3}$ full. What is the capacity of the tank?

4. A class was given a mathematics test. $\frac{1}{4}$ of the students did not complete the test. Of the students who did complete the test, $\frac{3}{5}$ of them were boys. Of the students who did not complete the test, $\frac{2}{5}$ of them were girls. What fraction of the class were girls?

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PROBLEM SOLVING

Strategies

Solve. Show your work.

5. Chantel read $\frac{1}{4}$ of the pages of a book on Saturday and another $\frac{2}{3}$ of the pages on Sunday. She read the last 5 pages on Monday. How many pages were in the book?

6. Mrs. Wright spent $\frac{2}{9}$ of her paycheck on food and $\frac{1}{3}$ on rent. She spent $\frac{1}{4}$ of the remainder on transportation. She had $210 left. How much was Mrs. Wright's paycheck?

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7. Keith won a cash prize in an art competition. He gave his mother $\frac{2}{5}$ of the money he won. Of the remainder, $\frac{1}{4}$ was given to his sister and $\frac{2}{3}$ was given to his brother. He had $15 left. How much was Keith's cash prize?

8. A generator needs a fixed amount of fuel to keep it running 2 hours a day. After running for 6 days, the generator's fuel tank was $\frac{2}{3}$ full. After 11 more days, $3\frac{1}{2}$ liters of fuel were left in the tank. If the tank was originally full, how much fuel can the tank hold?

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9. Rachel used $\frac{2}{3}$ of a string to tie some books together. She used $\frac{1}{3}$ of the remaining string for her art project. She had 30 centimeters of string left. What was the original length of the string? Express your answer in meters.

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10. At the butcher's shop, $\frac{1}{3}$ the weight of beef and $\frac{1}{4}$ the weight of chicken make up $54\frac{3}{4}$ pounds of the meat that the butcher has. If he has a total of $194\frac{1}{2}$ pounds of chicken and beef, find the total weight of chicken the butcher has.

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PROBLEM SOLVING

Exploration

Solve. Show your work.

11. The product of a mixed number and a whole number is $6\frac{2}{3}$.
Find two sets of numbers that result in this product.

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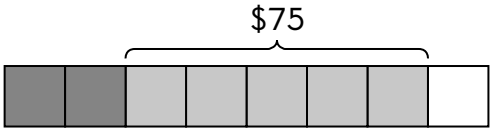
12. Write a fraction problem for this bar model. Then solve the problem.

Before

After



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Journal Writing

Find the mistake.

13. Jasmine was given this problem.

$\frac{21}{42} \times 6 = ?$

Jasmine solved the problem this way.

$$\frac{21}{42} \times 6 = \frac{21 \div 21}{42 \div 7} \times 6$$
$$= \frac{1}{6} \times 6$$
$$= 1$$

Circle her mistake. Then show the correct way to solve the problem.