Name **Answer Key**   Date _____

Lesson # 46
Complex Fraction Word Problems

1) A customer bought $\frac{2}{3}$ pound of roast beef and $\frac{1}{2}$ pound of cheese at the deli counter. What is the ratio of roast beef to cheese?

$\left(\dfrac{RB}{C}\right)$ $\dfrac{\frac{2}{3}}{\frac{1}{2}}$

$\dfrac{2}{3} \div \dfrac{1}{2}$

$= \dfrac{2}{3} \cdot \dfrac{2}{1}$

$= \dfrac{4}{3}$ (unit rate)

$1\frac{1}{3}$ or $\frac{4}{3}$ lbs of Roast Beef to 1 lb of Cheese.

2) A trail mix recipe calls for $\frac{1}{3}$ pound of mixed nuts, $\frac{4}{15}$ pounds of raisins, and $\frac{2}{5}$ pound of granola. What is ratio of raisins to mixed nuts?

$\left(\dfrac{R}{MN}\right)$ $\dfrac{\frac{4}{15}}{\frac{1}{3}}$

$\dfrac{4}{15} \div \dfrac{1}{3}$

$\dfrac{4}{\cancel{15}_5} \cdot \dfrac{\cancel{3}^1}{1}$

$= \dfrac{4}{5}$

$\frac{4}{5}$ lbs of raisins to 1 lb of mixed nuts.

3) The table shows how long Randi exercised each day.

Day	Monday	Tuesday	Wednesday	Thursday
Time Exercised	$\frac{2}{3}$ hour	$\frac{1}{2}$ hour	$\frac{1}{3}$ hour	$\frac{5}{6}$ hour

a) What is the ratio of the time Randi exercised on Monday to the time she exercised on Wednesday?

$\left(\dfrac{M}{W}\right)$ $\dfrac{\frac{2}{3}}{\frac{1}{3}}$

$\dfrac{2}{3} \div \dfrac{1}{3}$

$= \dfrac{2}{\cancel{3}_1} \cdot \dfrac{\cancel{3}^1}{1}$

$= \dfrac{2}{1}$

2 hour Mon to 1 hour Wed.

b) What is ratio of the time Randi exercised on Tuesday to the time she exercised on Thursday?

$\left(\dfrac{T}{Th}\right)$ $\dfrac{\frac{1}{2}}{\frac{5}{6}}$

$\dfrac{1}{2} \div \dfrac{5}{6}$

$= \dfrac{1}{\cancel{2}} \cdot \dfrac{\cancel{6}^3}{5}$

$= \dfrac{3}{5}$

$\frac{3}{5}$ hour Tues to 1 hour Thurs

c) What is the ratio of the time Randi exercised on Monday to the total time she exercised on all four days?

$\left(\dfrac{M}{Total}\right)$ $\dfrac{\frac{2}{3}}{2\frac{1}{3}}$

$\dfrac{2}{3} \div 2\frac{1}{3}$

$= \dfrac{2}{3} \div \dfrac{7}{3}$

$= \dfrac{2}{\cancel{3}_1} \cdot \dfrac{\cancel{3}^1}{7} = \dfrac{2}{7}$

$\frac{2}{7}$ hour Mon to 1 hour total

4) An artist made purple paint by mixing $\frac{1}{2}$ quart of red paint and $\frac{3}{4}$ quart of blue paint. What is the ratio of red paint to blue paint?

$\left(\dfrac{R}{B}\right)$ $\dfrac{\frac{1}{2}}{\frac{3}{4}}$ $\dfrac{1}{2} \div \dfrac{3}{4}$

$= \dfrac{1}{\overset{}{\underset{1}{2}}} \cdot \dfrac{\overset{2}{4}}{3}$

$= \dfrac{2}{3}$

$\frac{2}{3}$ qt red to 1 qt blue.

5) There is $\frac{1}{4}$ tbs. of salt to every $\frac{2}{3}$ cup of water in a recipe. How much salt would you need for one cup of water?

$\left(\dfrac{s}{w}\right)$ $\dfrac{\frac{1}{4}}{\frac{2}{3}}$ $\dfrac{1}{4} \div \dfrac{2}{3}$

$= \dfrac{1}{4} \cdot \dfrac{3}{2}$

$= \dfrac{3}{8}$

$\frac{3}{8}$ tbs salt to 1 cup water

6) If you were to make the recipe from above four times as large, how much water and how much salt would you add?

$\left(\dfrac{s}{w}\right)$ $\dfrac{\frac{1}{4} \cdot 4}{\frac{2}{3} \cdot 4} = \dfrac{1}{\frac{8}{3}}$

1 tbs salt

$\frac{8}{3}$ or $2\frac{2}{3}$ cup water

7) If you were to cut the recipe in half, how much water and how much salt would you add?

$\left(\dfrac{s}{w}\right)$ $\dfrac{\frac{1}{4} \cdot \frac{1}{2}}{\overset{1}{\frac{2}{3}} \cdot \frac{1}{\underset{1}{2}}} = \dfrac{\frac{1}{8}}{\frac{1}{3}}$

$\frac{1}{8}$ lbs salt

$\frac{1}{3}$ cup water

8) You walk half a mile in one-tenth of an hour. How many miles did you walk in an hour?

$\left(\dfrac{mi}{hr}\right)$ $\dfrac{\frac{1}{2}}{\frac{1}{10}}$ $\dfrac{1}{2} \div \dfrac{1}{10}$

$= \dfrac{1}{\underset{1}{2}} \cdot \dfrac{\overset{5}{10}}{1}$

$= \dfrac{5}{1}$

5 mph