

Name

Date

Class

Let's Be Rational

Unit Test Review

For Exercises 1–4, write number sentences to support your answers.

1. A local newspaper, *The Lansing Times*, sells advertising space. It charges advertisers according to the fraction of a page their ad will fill.

- a. A new restaurant owner purchased ads to run in the paper over several days. She bought two $\frac{1}{5}$ -page ads, four $\frac{1}{20}$ -page ads, and eight $\frac{1}{4}$ -page ads. What was the total amount of space that she bought?

Number sentence:

$$2\left(\frac{1}{5}\right) + 4\left(\frac{1}{20}\right) + 8\left(\frac{1}{4}\right) =$$

Solve:

$$\begin{aligned} &= \frac{2}{5} + \frac{4}{20} + \frac{8}{4} \\ &= \frac{2}{5}\left(\frac{4}{4}\right) + \frac{4}{20} + \frac{8}{4}\left(\frac{5}{5}\right) \\ &= \frac{8}{20} + \frac{4}{20} + \frac{40}{20} \\ &= \frac{52}{20} \end{aligned}$$

$$\begin{aligned} &= 20 \overline{) 52} \\ &\quad \underline{-40} \\ &\quad \quad 12 \\ &= 2 \frac{12}{20} \\ &= 2 \frac{3}{5} \quad \checkmark \end{aligned}$$

2. How many bows can you make from $3\frac{2}{3}$ meters of ribbon if $\frac{1}{8}$ of a meter of ribbon makes one bow?

Number Sentence: $3\frac{2}{3} \div \frac{1}{8} =$

Solve:

$$3\frac{2}{3} \div \frac{1}{8}$$

$$= \frac{11}{3} \times \frac{8}{1}$$

$$= \frac{88}{3}$$

$$3 \overline{) 88} \begin{array}{r} 29 \frac{1}{3} \\ - 6 \\ \hline 28 \\ - 27 \\ \hline 1 \end{array}$$

so 29 bows ✓

3. Sammy's mother bought $2\frac{1}{2}$ pounds of blueberries on Monday. Sammy ate $\frac{1}{12}$ of **all the blueberries** before he went to bed.
- a. How many pounds of blueberries did Sammy eat on Monday?

Number Sentence: $2\frac{1}{2} \times \frac{1}{12}$

Solve:

$$2\frac{1}{2} \times \frac{1}{12}$$

$$= \frac{5}{2} \times \frac{1}{12}$$

$$= \frac{5}{24} \text{ lbs}$$

✓

b. How many pounds of blueberries were left?

Number Sentence: $2\frac{1}{2} - \frac{5}{24}$

Solve: $2\frac{1}{2} = \frac{12}{24}$

$-\frac{5}{24} = \frac{5}{24}$

$2\frac{7}{24}$

$2\frac{7}{24}$ lbs

c. On Tuesday Sammy ate $\frac{1}{6}$ of all the remaining blueberries. How many pounds of blueberries did Sammy eat on Tuesday?

Number Sentence: $2\frac{7}{24} \times \frac{1}{6}$

Solve:

$\frac{55}{24} \times \frac{1}{6} = \frac{55}{144}$ lbs.

$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \end{array}$

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Unit Test Review (continued)

~~Multiple Choice~~ For each number sentence in Exercises 4–7:

- 1) write the fact family member that will assist you in solving the equation
- 2) find the value of N . Show your work.

4. $N - \frac{1}{8} = \frac{7}{20}$

Fact family member: $\frac{7}{20} + \frac{1}{8} = N$

Solve:

$$\begin{array}{r} \frac{7 \times 2}{20 \times 2} = \frac{14}{40} \\ + \frac{1 \times 5}{8 \times 5} = \frac{5}{40} \\ \hline \end{array}$$

$$\frac{19}{40} \checkmark$$

5. $\frac{2}{5} \times N = 12$

Fact family member: $12 \div \frac{2}{5} = N$

Solve:

$$12 \div \frac{2}{5} =$$

$$\frac{12}{1} \times \frac{5}{2} =$$

$$\frac{60}{2} = 30$$

$$6. N + \frac{3}{4} = \frac{17}{20}$$

Fact family member: $\frac{17}{20} - \frac{3}{4} = N$

Solve:

$$\begin{array}{r} \frac{17}{20} = \frac{17}{20} \\ - \frac{3}{4} = \frac{15}{20} \\ \hline \end{array}$$

$$\frac{2}{20} = \frac{1}{10}$$

$$7. 6 \div \frac{2}{7} = N$$

Fact family member: $6 \div \frac{2}{7} = N$

Solve:

$$\frac{6}{1} \times \frac{7}{2} = \frac{42}{2} = 21$$

8. Define

a. Sum = SOLUTION/ANSWER TO AN ADDITION PROBLEM

b. Difference = SOLUTION/ANSWER TO A SUBTRACTION PROBLEM

c. Product SOLUTION/ANSWER TO A MULTIPLICATION PROBLEM

d. What is the quotient of $2\frac{2}{3}$ and $\frac{5}{6}$

Number sentence: $2\frac{2}{3} \div \frac{5}{6}$

Solve:

$$2\frac{2}{3} \div \frac{5}{6}$$

$$= \frac{8}{3} \div \frac{5}{6}$$

$$= \frac{8}{3} \times \frac{6}{5}$$

$$= \frac{48}{15}$$

$$= 3\frac{3}{15}$$

$$= 3\frac{1}{5}$$

$$\begin{array}{r} 3\frac{3}{15} \\ 15 \overline{) 48} \\ \underline{-45} \\ 3 \end{array}$$