MAT 095 – LAB 6 – Problems Involving Fractions

Please show your work! All your answers need to be justified to receive credit!

1. (Tutor)
\[
\frac{1}{4} - \frac{2}{7} + \frac{3}{14} \\
= \frac{1}{4} - \frac{2}{7} \times \frac{14}{3} \\
= \frac{1}{4} - \frac{4}{3} \\
= \frac{3}{12} - \frac{16}{12} \\
= -\frac{13}{12} = -1 \frac{1}{12}
\]

2. \[
\frac{3}{5} - \frac{2}{5} \div \frac{3}{10} \times \frac{1}{4}
\]

3. \[
\frac{1}{4} = \left( \frac{2}{3} - \frac{1}{2} + \frac{1}{4} \right)
\]
4. (Tutor)

\[ x - \frac{2}{3} = \frac{3}{4} \]

\[ x = \frac{3}{4} + \frac{2}{3} \]

\[ x = \frac{3}{4} + \frac{2}{3} = \frac{9}{12} + \frac{8}{12} = \frac{17}{12} = \frac{15}{12} \]

5. \[ \frac{3x}{5} - 1 = \frac{1}{2} \]

6. \[ \frac{7}{5} = \frac{x}{15} \]
7. (Tutor)

Jennifer wants to make biscuits. She has a recipe that uses 5 cups of flour and 1 cup of milk. But she only has 3 cups of flour. How many cups of milk will she need to make biscuits with only 3 cups of flour?

Solution. The ratio of milk to flour should remain the same. That is,

\[
\frac{1 \text{ cup of milk}}{5 \text{ cups of flour}} = \frac{x \text{ cups of milk}}{3 \text{ cups of flour}}
\]

Solve for \( x \).

We have

\[
5x = 3
\]

\[
x = \frac{3}{5}
\]

Jennifer needs 3/5 cups of milk to make biscuits.

8. When 2,000 pounds of paper are recycled or reused, 17 trees are saved.

   a. How many trees are saved if 10,000 pounds of paper are recycled?

   b. How many trees are saved if 5,000 pounds of paper are recycled?

9. On average the human heart beats at 72 beats per minute. How many beats does it make in 15 seconds? How many beats in an hour? How many beats in a day?
10. (Tutor)

There are 30 students in Mr. Goldfinch’s cooking class. 2/5 of the students were absent on Tuesday. How many students were absent on Tuesday? How many students were in class?

Solution: Recall the meaning of a fraction. We will treat 30 students as a whole and divide it into 5 parts. Each part will have 6 students, with 2 parts absent. That is, 12 students were absent. So, 30-12=18. 18 students were in class on Tuesday.

11. Liana and Doug shared 21 cookies. Liana ate 2/7 of the cookies. Doug ate 1/3 of the cookies. How many cookies did Liana eat? How many cookies did Doug eat? How many cookies were left?

12 (Optional). Mrs. Scruggs baked a cake. She ate 1/6 of the cake and gave 7/12 of the cake to her neighbor. What fraction of the cake was left?