

Case Study 1

Ananya is a Class 7 student who helps her mother in the kitchen every evening. One day, her mother decided to bake cakes for a small family function. For one cake, the recipe required $\frac{3}{4}$ cup of flour, $\frac{1}{2}$ cup of sugar, and $\frac{2}{5}$ cup of milk. Since Ananya wanted to prepare **two cakes**, she first converted the mixed and improper quantities properly and then calculated the total amount of each ingredient required.

While measuring sugar, Ananya noticed that $\frac{1}{2}$ cup can also be written as the decimal 0.5. She added 0.5 cup of sugar twice and found the total using decimal addition. For flour, she added $\frac{3}{4} + \frac{3}{4}$ and simplified the fraction. She also divided $\frac{2}{5}$ cup of milk equally into two bowls to check her understanding of division of fractions.

Later, Ananya helped her younger brother complete his homework. He had to convert the mixed fraction $1\frac{1}{4}$ into an improper fraction and then into a decimal. In the evening, Ananya recorded all the ingredient quantities in a notebook using decimals such as 1.5, 0.75, and 0.4 for easy understanding.

Through cooking, sharing, and recording measurements, Ananya learned how fractions and decimals are used in daily life, especially in measuring, adding, subtracting, multiplying, and converting quantities accurately.

Questions

- How much flour was required in total for two cakes?
 - (A) $\frac{3}{4}$ cup
 - (B) $1\frac{1}{2}$ cups
 - (C) $\frac{6}{8}$ cup
 - (D) $2\frac{1}{4}$ cups
- What is the total amount of sugar used for two cakes in decimal form?
 - (A) 0.5
 - (B) 1.5
 - (C) 1.0
 - (D) 2.0
- What is the amount of milk in each bowl if $\frac{2}{5}$ cup of milk is divided equally?
 - (A) $\frac{2}{10}$ cup
 - (B) $\frac{1}{5}$ cup
 - (C) $\frac{4}{5}$ cup
 - (D) $\frac{1}{10}$ cup
- What is the improper fraction form of the mixed fraction $1\frac{1}{4}$?
 - (A) $\frac{5}{4}$
 - (B) $\frac{4}{5}$
 - (C) $\frac{3}{4}$
 - (D) $\frac{6}{4}$
- Which decimal correctly represents the fraction $\frac{3}{4}$?

- (a) (A) 0.25
- (b) (B) 0.34
- (c) (C) 0.75
- (d) (D) 1.25

Answer Key

- Q1: (B)
- Q2: (C)
- Q3: (B)
- Q4: (A)
- Q5: (C)

Solutions

1. Flour needed for one cake = $\frac{3}{4}$ cup. For two cakes:

$$\frac{3}{4} + \frac{3}{4} = \frac{6}{4} = 1\frac{1}{2}$$

Hence, the correct answer is $1\frac{1}{2}$ cups.

2. Sugar needed for one cake = $\frac{1}{2} = 0.5$. For two cakes:

$$0.5 + 0.5 = 1.0$$

So, the total sugar used is 1.0 cup.

3. Milk used = $\frac{2}{5}$ cup. Dividing equally:

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

Each bowl gets $\frac{1}{5}$ cup of milk.

4. To convert $1\frac{1}{4}$ into an improper fraction:

$$(1 \times 4 + 1) = 5 \Rightarrow \frac{5}{4}$$

Hence, the improper fraction is $\frac{5}{4}$.

5. To convert $\frac{3}{4}$ into a decimal:

$$3 \div 4 = 0.75$$

Therefore, the correct decimal representation is 0.75.