There are 10 students who live on-campus, so the probability of choosing a student who lives on-campus is

$$P(\text{on-campus}) = \frac{10}{17}.$$

We also need to know the probability that a randomly selected student is both a freshman and lives on-campus. There are 10 students who are both a freshman and live on-campus. So, the probability of choosing a student who is in both groups is

$$P(\text{freshman and on-campus}) = \frac{3}{17}.$$

Now, using the Addition Rule for Probability, we can calculate the probability that a randomly chosen member of the Student Government Board is a freshman or lives in on-campus housing.

$$\begin{aligned} P(\text{freshman or on-campus}) &= \frac{5}{17} + \frac{10}{17} - \frac{3}{17} \\ &= \frac{5+10-3}{17} \\ &= \frac{12}{17} \\ &\approx 0.705882 \end{aligned}$$

Therefore, the probability that a randomly chosen member of the Student Government Board is a freshman or lives in on-campus housing is 0.705882.

# 10.R.3 Exercises

## Concept Check

**True/False.** Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

**1.** The final step in adding fractions is to reduce, if possible.

**2.** The process for finding the LCD is the same as the process for finding the LCM.

**3.** When subtracting fractions, simply subtract the numerators and the denominators.

**4.** Subtraction of fractions requires that the fractions have the same denominators.

## Practice

Perform the indicated operation and reduce your answer.

**5.** $\frac{5}{32}+\frac{15}{32}$

**6.** $\frac{11}{21}+\frac{5}{35}$

**7.** $\frac{6}{18}+\frac{2}{6}$

**8.** $\frac{8}{11}-\frac{4}{11}$

**9.** $\frac{11}{18}-\frac{2}{9}$

**10.** $\frac{17}{20}-\frac{9}{15}$

## Applications

Solve.

**11.** If your income is \$4820 a month and you plan to budget $\frac{3}{4}$ of your income for rent and $\frac{1}{20}$ of your income for food, how much do you plan to spend each month on these two items? Simplify your answer.

**12.** Three letters weigh $\frac{1}{2}$ ounces, $\frac{1}{3}$ ounces, and $\frac{5}{6}$ ounces. What is the total weight of the letters? Simplify your answer.

## Writing & Thinking

**13.** Explain the steps to follow when adding or subtracting fractions with unlike denominators