

Fractions and Square Roots

1. What is the improper fraction or mixed number represented by the following figure?



- A. $2 \frac{1}{3}$
- B. $\frac{7}{6}$
- C. $2 \frac{5}{8}$
- D. $\frac{11}{3}$
- E. $\frac{11}{9}$

2. Which of the following fractions most correctly depicts the shaded area of the circle below?



- A. $\frac{3}{8}$
- B. $\frac{5}{8}$
- C. $\frac{3}{4}$
- D. $\frac{5}{11}$
- E. $\frac{1}{2}$

3. Which of the following is not a fraction equivalent to $\frac{3}{4}$?

- A. $\frac{6}{8}$
- B. $\frac{9}{12}$
- C. $\frac{12}{18}$
- D. $\frac{21}{28}$
- E. $\frac{27}{36}$

4. Solve: $0.25 + 0.65$

- A. $\frac{1}{2}$
- B. $\frac{9}{10}$
- C. $\frac{4}{7}$
- D. $\frac{2}{9}$
- E. $\frac{5}{16}$

5. Which of the following statements is false?

- A. In the fraction $\frac{1}{2}$, one is the numerator.
- B. When 4.89 is rounded to the ones place, the answer is 5.
- C. Ten thousandths place is located 5 places to the right of the decimal
- D. $\frac{7}{6}$ is described as an improper fraction.
- E. $33\frac{1}{3}\%$ is equivalent to $\frac{1}{3}$

6. Find the square of $\frac{25}{9}$

- A. $\frac{5}{3}$
- B. $\frac{3}{5}$
- C. $7\frac{58}{81}$
- D. $\frac{15}{2}$
- E. $\frac{650}{81}$

7. Sarah needs to make a cake and some cookies. The cake requires $\frac{3}{8}$ cup of sugar and the cookies require $\frac{3}{5}$ cup of sugar. Sarah has $\frac{15}{16}$ cups of sugar. Does she have enough sugar, or how much more does she need?

- A. She has enough sugar.
- B. She needs $\frac{1}{8}$ of a cup of sugar.
- C. She needs $\frac{3}{80}$ of a cup of sugar.
- D. She needs $\frac{4}{19}$ of a cup of sugar.
- E. She needs $\frac{1}{9}$ of a cup of sugar.

8. There are 8 ounces in a $\frac{1}{2}$ pound. How many ounces are in $7\frac{3}{4}$ lbs?

- A. 12 ounces
- B. 86 ounces
- C. 119 ounces
- D. 124 ounces
- E. 138 ounces

9. If the value of x and y in the following fraction are both tripled, how does the value of the fraction change?

XZ

Y

- A. increases by half
- B. decreases by half
- C. triples
- D. doubles
- E. remains the same

10. Which of the following fractions is the equivalent of 0.5%

- A. $\frac{1}{20}$
- B. $\frac{1}{200}$
- C. $\frac{1}{2000}$
- D. $\frac{1}{5}$
- E. $\frac{1}{500}$

11. Which of these numbers is a factor of 21

- A. 2
- B. 5
- C. 7
- D. 42
- E. 44

12. If the average person drinks 8, (8oz) glasses of water per day, a person who drinks 12.8 oz of water after a morning exercise session has consumed what fraction of the daily average?

- A. $\frac{1}{3}$
- B. $\frac{1}{5}$
- C. $\frac{1}{7}$
- D. $\frac{1}{9}$
- E. $\frac{1}{10}$

13. You need $\frac{4}{5}$ cups of water for a recipe. You accidentally put $\frac{1}{3}$ cups into the mixing bowl with the dry ingredients. How much more water in cups do you need to add?

- A. $\frac{1}{3}$ cups
- B. $\frac{2}{3}$ cups
- C. $\frac{1}{15}$ cups
- D. $\frac{7}{15}$ cups
- E. $\frac{7}{16}$ cups

14. $\frac{3}{4} - \frac{1}{2} =$

- A. $\frac{1}{4}$
- B. $\frac{1}{3}$
- C. $\frac{1}{2}$
- D. $\frac{2}{3}$
- E. $\frac{2}{5}$

15. $7\frac{1}{2} - 5\frac{3}{8} =$

- A. $1\frac{1}{2}$
- B. $1\frac{2}{3}$
- C. $2\frac{1}{8}$
- D. $3\frac{1}{4}$
- E. 3

Answers & Explanations

1. C: The figure shows 2 completely shaded circles, plus $\frac{1}{8}$ more than $\frac{4}{8}$ shaded on the third circle. Thus, the figure represents the mixed number, $2\frac{5}{8}$.

2. B: The circle shows $\frac{1}{8}$ more than $\frac{4}{8}$, which represents $\frac{5}{8}$.

3. C: The fraction, $\frac{12}{18}$, is not equivalent to the fraction, $\frac{3}{4}$, since the fractions do not represent the same ratio. The denominator for Choice C would need to be 16, for the two fractions to be equivalent.

4. B: The sum equals 0.90, which may also be written as $\frac{9}{10}$.

5. C: The ten thousandths place is located 4 places to the right of the decimal.

6. C: The square of the given fraction may be written as $\frac{252}{92}$, or $\frac{625}{81}$, which equals $7\frac{58}{81}$.

7. C: The sum of $\frac{3}{8}$ cup of sugar and $\frac{3}{5}$ cup of sugar is $\frac{39}{40}$ cup of sugar. $\frac{39}{40}$ cup of sugar can be compared to $\frac{15}{16}$ cup of sugar by finding a common denominator. Doing so shows that Sarah will need $\frac{78}{80}$ cup of sugar, but only has $\frac{75}{80}$ cup of sugar. Thus, she needs $\frac{3}{80}$ cup of sugar.

8. D: The following proportion may be used to find the solution: $8/0.5=x/7.75$. Solving for x gives $x = 124$. Thus, there are 124 ounces in $7 \frac{3}{4}$ pounds.

9. E: The value does not change because the 3 in the numerator and the 3 in the denominator cancel. $3XZ/3Y=XZ/Y$.

10. B: $0.5\% = 0.005$, which may be written as $5/1000$, which reduces to $1/200$.

11. C: The number, 7, is a factor of 21, since 7 will divide evenly into 21.

12. B: The fraction of the daily consumption may be represented as $12.8/64$, or 0.2. This decimal represents $1/5$. Thus, a consumption of 12.8 ounces of water is $1/5$ of the daily average consumption.

13. D: The amount you need to add is equal to the difference of $4/5$ and $1/3$. Finding a common denominator allows you to write $12/15-5/15$, which equals $7/15$. Thus, you need to add $7/15$ cup of water.

14. A: The difference may be written as $3/4-2/4$, which equals $1/4$.

15. C: The difference may be written as $7 \frac{4}{8}-5 \frac{3}{8}$, which equals $2 \frac{1}{8}$.