

Fractions

1. Write the following fractions in lowest terms.

(a) $\frac{18}{30}$

(b) $\frac{-24}{60}$

(c) $\frac{98}{140}$

(d) $\frac{5^7 \times 7^5}{5^6 \times 7^7}$

(e) $\frac{2^3 \times 6^3 \times 5^8}{2^4 \times 3^5 \times 25^4}$

2. Find one fraction that is between the fractions $\frac{1}{3}$ and $\frac{5}{12}$.

3. Find one fraction that is between the fractions $\frac{-5}{2}$ and $-2\frac{5}{6}$.

4. True or False: $\frac{-3}{4} > \frac{-1}{4}$.

5. How many fractions are there between $\frac{3}{7}$ and $\frac{5}{7}$?

- (a) 0 (b) $\frac{2}{7}$ (c) 1 (d) 2 (e) 3 (f) an infinite amount

6. Draw fraction bars which demonstrate the following equalities.

(a) $\frac{3}{4} = \frac{9}{12}$

(b) $\frac{1}{3} = \frac{2}{6}$

7. Draw fraction bars which demonstrate the following inequalities.

(a) $\frac{5}{6} > \frac{2}{3}$

(b) $\frac{1}{2} < \frac{7}{12}$

8. Draw fraction bars which demonstrate the following calculations.

(a) $\frac{1}{3} + \frac{1}{2} = \frac{5}{6}$

(b) $\frac{1}{2} + \frac{5}{12} = \frac{11}{12}$

9. In a large group of children each child is either 8 years old, 9 years old or 10 years old. If $\frac{1}{3}$ of them are 8 years old and $\frac{2}{7}$ of them are 9 years old, then what fraction of them are 10 years old?

10. Martha has read $\frac{4}{5}$ of a 205-page book. How many pages does she have left to read?
11. One bit is one-eighth of a Spanish dollar. A teacher asks students to start with 21 bits and to exchange the bits for whole Spanish dollars and bits. The point of such an exercise is to teach the students
- that every little bit counts when doing mathematics.
 - how to multiply fractions.
 - about the least common multiple.
 - how to express fractions as mixed fractions.
 - the commutative property of addition.
 - the commutative property of multiplication.
12. C. D. Mueller University has male and female students. If 4500 of the students are male and two-thirds of the students are female, then what is the total number of students who attend this university?
13. A foot is $\frac{1}{3}$ the length of a yard. The volume of a box is 33 cubic feet. What is the volume of the box in cubic yards?
14. An inch is $\frac{1}{12}$ the length of a foot. The area of a rectangle is $\frac{1}{3}$ square feet. What is the area of the rectangle in square inches?
15. Write the fractions $\frac{19}{31}$, $\frac{7}{11}$, and $\frac{19}{30}$ in decreasing order. How would you list the order if the fractions were all negative?
16. If a , b , c and d are positive integers, then which of the following is not always true?
- $\frac{a}{b} \times \frac{c}{d} = \frac{a}{b} \div \frac{d}{c}$
 - $\frac{a}{b} + \frac{c}{d} = \frac{a+c}{b+d}$
 - $\frac{a}{b} \div \frac{c}{d} = \frac{a \div c}{b \div d}$
 - $\frac{a}{b} \cdot \frac{c}{d} = \frac{a \cdot c}{b \cdot d}$
17. Each lap around a small track at an elementary school is a distance of $\frac{1}{8}$ of mile. How many times would a student need to run around the track to run a total distance of $2\frac{1}{4}$ miles?
18. A clerk sold three pieces of one type of ribbon to different customers. One piece was $\frac{1}{3}$ feet long, another was $2\frac{1}{4}$ feet long, and the third was $3\frac{1}{2}$ feet long. What was the total length of that type of ribbon sold?
- $6\frac{1}{12}$ feet
 - $6\frac{1}{6}$ feet
 - $6\frac{1}{4}$ feet
 - $6\frac{1}{3}$ feet