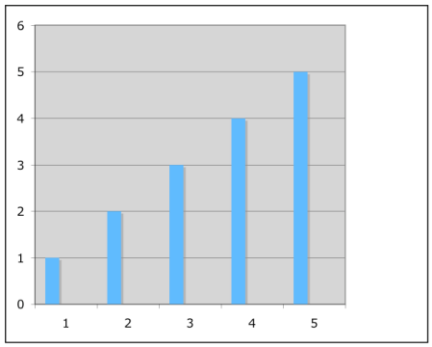
Activities/ Resources for Unit III: Fractions

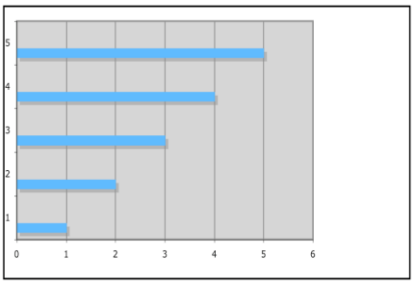
Fractions Glossary

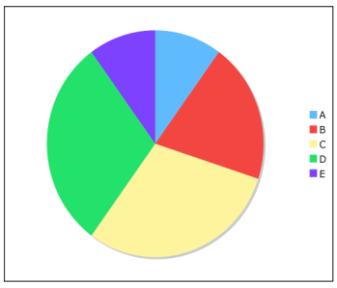
1. **Bar Graph**
   A chart with bars where the lengths of each bar represents an amount



2. **Canceling**
   Removing common factors from a fraction
   Example: 2 is a common factor in the numerator and denominator of 4/6 and can be cancelled. $\frac{4}{6} = \frac{2 \times 2}{2 \times 3} = \frac{2}{3}$

3. **Chart**
   A graph with lines or shapes representing numbers





4. **Common Denominator**
   The bottom number that 2 or more fractions share
   Example: $\frac{2}{5}$ and $\frac{3}{5}$ have the common denominator 5

5. **Conversion**
   Changing from one unit of measurement to another, changing from one form of a number to another
   Examples: 1 mile = 1.6 kilometers or 7 miles x 1.6 = 11.2 kilometers.
   You can convert the fraction $\frac{3}{2}$ to the mixed number 1 ½.

6. **Decimal**
   A fraction expressed with a period to show tenths, hundredths etc.
   Examples: The decimal .25 is the same as $\frac{25}{100}$

7. **Denominator**
   The bottom number in a fraction
   Example: In the fraction $\frac{3}{7}$, 7 is the denominator.

8. **Factors**
   Whole numbers that can be multiplied to equal another number
   Example: 2 x 3 = 6, so both 2 and 3 are factors of 6.

9. **Fraction**
   A part of a whole, shown as one number over another
   Example: $\frac{3}{4}$ represents 3 parts of the whole 4.

10. **How much of**
    Asking the fraction or percentage of the total
    Example: If I spend 8 hours a day working, how much of the day do I work?
    I spend $\frac{8}{24}$ or $\frac{1}{3}$ of my day working.

11. **Improper fraction**
    A fraction with a numerator larger than its denominator.
    Example: $\frac{4}{3}$ is an improper fraction because the number on top is larger than the number on the bottom

12. **Interest**
    Money that is added to an amount over time
    Example: If you borrow $10,000 from the bank for a year, you must pay back the principal $10,000 plus 6% interest for a total of $10,600.00.

13. **Lowest common denominator** (LCD)
    The lowest common multiple of the denominators of 2 or more fractions

Example: If you add $\frac{1}{3} + \frac{1}{4}$ you need to convert fractions to a common denominator of 12.

$$\frac{1}{3} = \frac{4}{12} \quad \text{and} \quad \frac{1}{4} = \frac{3}{12} \quad \text{so} \quad \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$$

14. **Mean**
The average of a set of numbers.
Example:
The mean of the set (4, 5, 6) is 5, because the sum of 15 divided by 3 is 5.

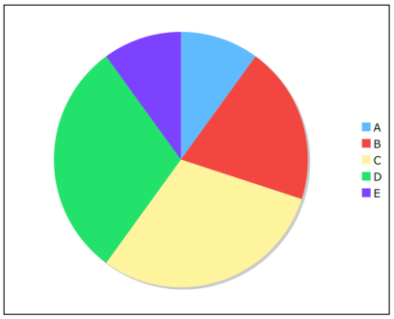
15. **Median**
The middle number in a series of numbers, smallest to largest
Examples:
- In the set (3, 5, 6, 8,10) the median is 6 because there are 5 numbers in the set and six is the middle number.
- In the set (2, 4, 6, 8) the median is 5. Because there is no middle number, the median is the average of the 2 numbers closest to the middle.

16. **Mixed number**
A fraction that is greater than 1
Example: 1 ½ is a mixed number.

17. **Mode**
The number that appears the most often in a set of numbers
Example: In the set (1, 3, 3, 3, 5, 7, 7, 9), 3 is the mode because it appears more than any other number.

18. **Numerator**
The top number in a fraction
Example: In $\frac{3}{4}$ The numerator is 3.

19) **Pie Chart**
A circular chart divided into triangular areas proportional to the percentages of the whole.



20. **Percent**
A fraction expressed as parts of 100.
Example: $\frac{3}{4}$ is the same as $\frac{75}{100}$ or 75%.

21. **Prime Number**
    A number whose only 2 factors are 1 and itself
    Example: 1, 2, 3, 5, 7 and 11 are all prime numbers.

22. **Principal**
    The total loan amount
    Example: If you borrow $10,000 to buy a car, the principal is $10,000. You will have to pay back the principal plus interest.

23. **Proper Fraction**
    A fraction with a numerator smaller than its denominator
    Example: $\frac{3}{4}$ is a proper fraction because the top number is smaller than the bottom number.

24. **Proportion**
    When two ratios are equal
    Example: 10:20 = 1:2. This is a proportion because the two ratios are equal.

25. **Rate**
    The interest on a loan as a percentage.
    Example: You will have to pay 6% interest on the loan. So for $10,000 the interest is $600 for a year.

26. **Ratio**
    The relationship between numbers expressed as a fraction, or a number divided by another.
    Example: The number 10 is ½ of 20 or $\frac{10}{20}$

27. **Reduce**
    Change a fraction to express the lowest denominator.
    Example: $\frac{2}{4}$ can be reduced to ½

28. **Simple interest**
    Principal x rate x time
    Example: If you borrow $10,000 at 6% for a year, you will pay back 10,000 x .06 x 1 year for a total of $600 simple interest.

29. **Unit of measurement**
    How items are measured
    Example: Miles and kilometers are both units of measurement.

30. **What fraction of**
    What part of something when divided
    Example: If there are 10 students in class and 4 of them are women, what fraction of the class are women? The answer is 4/10 or 2/5.

Adding and Subtracting Fractions

Add or subtract as indicated. Leave all answers in lowest terms.

1) $\frac{2}{9}+\frac{4}{9}$

2) $\frac{7}{10}-\frac{1}{10}$

3) $\frac{3}{8}+\frac{7}{8}$

4) $\frac{7}{12}+\frac{5}{12}$

5) $\frac{5}{6}+\frac{2}{3}$

6) $\frac{3}{4}+\frac{1}{8}$

7) $\frac{3}{5}+2$

8) $6-\frac{5}{9}$

9) $\frac{3}{5}+\frac{2}{3}$

10) $\frac{5}{3}+\frac{7}{4}$

11) $\frac{4}{5}-\frac{2}{7}$

12) $\frac{7}{8}-\frac{2}{3}$

13) $\frac{3}{10}+\frac{7}{15}$

14) $\frac{11}{18}+\frac{5}{12}$

15) $\frac{13}{16}-\frac{9}{20}$

16) $\frac{11}{15}-\frac{2}{9}$

17) $\frac{3}{8}+\frac{1}{4}$

18) $\frac{5}{6}-\frac{5}{8}$

19) $\frac{3}{5}+\frac{5}{6}$

20) $\frac{1}{6}+\frac{13}{12}$

21) $\frac{3}{4}-\frac{3}{8}$

22) $\frac{4}{7}+\frac{2}{3}$

Multiplying and Dividing Fractions

Multiply or divided as indicated. Leave all answers in lowest terms.

1) $\left(\frac{3}{4}\right)\left(\frac{5}{7}\right)$

2) $\left(\frac{3}{8}\right)(5)$

3) $\left(\frac{6}{7}\right)\left(\frac{5}{9}\right)$

4) $\left(\frac{2}{15}\right)\left(\frac{21}{16}\right)$

5) $(14)\left(\frac{5}{21}\right)$

6) $\left(\frac{3}{8}\right)\left(\frac{1}{9}\right)\left(\frac{4}{15}\right)$

7) $\left(\frac{6}{7}\right)\left(\frac{13}{15}\right)\left(\frac{28}{30}\right)$

8) $\left(\frac{3}{8}\right)(6)\left(\frac{16}{15}\right)$

9) $\frac{2}{3} \div \frac{3}{4}$

10) $\frac{4}{9} \div \frac{12}{15}$

11) $5 \div \frac{3}{8}$

12) $\frac{6}{7} \div 9$

13) $\left(\frac{2}{5}\right)\left(\frac{9}{4}\right)$

14) $\left(\frac{1}{3}\right)\left(\frac{6}{7}\right)$

15) $\frac{1}{2} \div \frac{2}{3}$

16) $8 \div \frac{4}{5}$

17) $\frac{1}{8} \div \frac{9}{4}$

18) $\frac{3}{5} \div 8$

19) $\frac{3}{10} \div \frac{1}{10}$

20) $\left(\frac{4}{5}\right)\left(\frac{1}{2}\right)\left(\frac{2}{3}\right)$

Mixed Numbers and Improper Fractions

Write each fraction as a mixed number in lowest terms.

1) $\frac{7}{3}$

2) $\frac{112}{6}$

3) $\frac{13}{12}$

4) $\frac{122}{8}$

5) $\frac{46}{21}$

6) $\frac{48}{15}$

7) $\frac{437}{53}$

8) $\frac{66}{12}$

Write each mixed number as an improper fraction in lowest terms.

9) $3\frac{5}{8}$

10) $12\frac{1}{3}$

11) $9\frac{5}{6}$

12) $125\frac{2}{3}$

13) $8\frac{6}{10}$

14) $16\frac{4}{6}$

15) $12\frac{3}{15}$

16) $18\frac{3}{12}$