Before Class:

- Read the objectives on page 17.
- Complete the exercises:
  1. When is a fraction said to be in lowest terms?
  2. Write the first five prime numbers.
  3. Read the Fundamental Principle of Fractions box on page 18. If \( \frac{a}{b} \) is a fraction and \( c \) is a nonzero real number, then \( \frac{a \cdot c}{b \cdot c} = \) __________________.

During Class:

- Write your class notes. Neatly write down all examples shown as well as key terms or phrases with definitions. If not applicable or if you were absent, watch the Lecture Series (DVD) for this section and do the same (write down the examples shown as well as key terms or phrases). Insert more paper as needed.

<table>
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<th>Class Notes/Examples</th>
<th>Your Notes</th>
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Answers:  
1) when the numerator and the denominator have no factors in common other than 1  
2) 2, 3, 5, 7, 11  
3) \( \frac{a}{b} \)
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<th>Class Notes (continued)</th>
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(Insert additional paper as needed.)
Practice:

☐ Complete the Vocabulary and Readiness Check on page 22.

☐ Next, complete any incomplete exercises below. Check and correct your work using the answers and references at the end of this section.

Review this example:

1. Write \( \frac{42}{49} \) in lowest terms.

Write the numerator and the denominator as products of primes; then apply the fundamental principle to the common factor 7.

\[
\frac{42}{49} = \frac{2 \cdot 3 \cdot 7}{7 \cdot 7} = \frac{2 \cdot 3}{7} = \frac{6}{7}
\]

Your turn:

2. Write \( \frac{10}{15} \) in lowest terms.

Review this example:

3. Multiply \( \frac{2}{15} \) and \( \frac{5}{13} \). Write the product in lowest terms.

\[
\frac{2}{15} \cdot \frac{5}{13} = \frac{2 \cdot 5}{15 \cdot 13} = \frac{2 \cdot 5}{3 \cdot 5 \cdot 13} = \frac{2}{39}
\]

Your turn:

4. Multiply and write the answer in lowest terms.

\[
\frac{2}{3} \cdot \frac{3}{4} = \frac{2 \cdot 3}{3 \cdot 4} = \frac{1}{2}
\]

Review this example:

5. Divide. Write all quotients in lowest terms.

a. \( \frac{4}{5} \div \frac{5}{16} \)

\[
\frac{4}{5} \div \frac{5}{16} = \frac{4 \cdot 16}{5 \cdot 5} = \frac{4 \cdot 16}{25} = \frac{64}{25}
\]

b. \( \frac{7}{10} \div \frac{14}{10} \)

\[
\frac{7}{10} \div \frac{14}{10} = \frac{7}{1} = \frac{7 \cdot 1}{2 \cdot 7} = \frac{1}{20}
\]

c. \( \frac{3}{8} \div \frac{3}{10} \)

\[
\frac{3}{8} \div \frac{3}{10} = \frac{3 \cdot 10}{2 \cdot 2 \cdot 3} = \frac{5}{4}
\]

Your turn:

6. Divide and write the answer in lowest terms.

\[
\frac{3}{4} \div \frac{1}{20} = \frac{3 \cdot 20}{4} = \frac{5}{4}
\]
Section 1.3 Fractions

**Review this example:**
7. Add and write the answer in lowest terms.

\[
\frac{3}{10} + \frac{2}{10} = \frac{3 + 2}{10} = \frac{5}{10} = \frac{5}{2} \cdot \frac{1}{2} = \frac{1}{2}
\]

**Your turn:**
8. Subtract and write the answer in lowest terms.

\[
\frac{17}{21} - \frac{10}{21} = \frac{7}{21} = \frac{1}{3}
\]

**Review this example:**
9. Add and write the answer in lowest terms.

\[
\frac{2}{5} + \frac{1}{4}
\]

Since 20 is the smallest number that both 5 and 4 divide into evenly, 20 is the least common denominator. Write both fractions as equivalent fractions with denominators of 20.

\[
\frac{2}{5} = \frac{2 \cdot 4}{5 \cdot 4} = \frac{8}{20} \quad \frac{1}{4} = \frac{1 \cdot 5}{4 \cdot 5} = \frac{5}{20}
\]

\[
\frac{2}{5} + \frac{1}{4} = \frac{8}{20} + \frac{5}{20} = \frac{13}{20}
\]

**Your turn:**
10. Subtract and write the answer in lowest terms.

\[
\frac{10}{3} - \frac{5}{21} = \frac{65}{21}
\]

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**Next, insert your homework.** Make sure you attempt all exercises asked of you and show all work, as in the exercises above. Check your answers if possible. Clearly mark any exercises you were unable to correctly complete so that you may ask questions later. DO NOT ERASE YOUR INCORRECT WORK. THIS IS HOW WE UNDERSTAND AND EXPLAIN TO YOU YOUR ERRORS.