Module 2: Working with Fractions and Mixed Numbers
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Answer the following questions.

For Exercises 1 – 6, represent each fraction as an equivalent fraction with the indicated denominator.

1) \(\frac{3}{4}, \frac{12}{16}\)  2) \(\frac{1}{4}, \frac{12}{12}\)

3) \(\frac{4}{10}, \frac{2}{5}\)  4) \(\frac{12}{16}, \frac{4}{4}\)

5) \(\frac{2}{3}, \frac{12}{12}\)  6) \(\frac{1}{2}, \frac{10}{10}\)

7) Where is \(\frac{0}{6}\) on the number line? It is at 0.

8) Where is \(\frac{8}{8}\) on the number line? It is at 1.

For Exercises 9 – 12, use the fraction number line diagram to re-write each fraction with the same denominator. Then evaluate the expression.

9) \(\frac{3}{5} - \frac{2}{10}, \frac{2}{5}\)  10) \(\frac{11}{16}, \frac{3}{8}, \frac{5}{16}\)

11) \(\frac{2}{3} - \frac{1}{2} + \frac{3}{4}, \frac{11}{12}\)  12) \(\frac{5}{6} - \frac{2}{3}, \frac{1}{6}\)

13) Can \(\frac{1}{3}\) be written as a fraction with a denominator of 16? Why or why not? No. Three is not a factor of 16.

14) How do we represent the whole number 1 as a fraction with a denominator of 12? \(\frac{12}{12}\)

For Exercises 15 – 22, identify the LCD and then re-write each fraction as an equivalent fraction having the LCD.

15) \(\frac{2}{3}, \frac{5}{6}\)  16) \(\frac{3}{4}, \frac{5}{8}\)

17) \(\frac{1}{9}, \frac{2}{3}\)  18) \(\frac{2}{7}, \frac{2}{21}\)

19) \(\frac{5}{6}, \frac{1}{4}, \frac{3}{8}\)  20) \(\frac{1}{2}, \frac{2}{3}, \frac{2}{5}\)

21) \(\frac{3}{8}, \frac{4}{5}, \frac{7}{10}\)  22) \(\frac{9}{14}, \frac{3}{4}, \frac{6}{7}\)

23) Where is the fraction \(\frac{3}{2}\) on the number line? It is at \(1\frac{1}{2}\)

24) Where is the fraction \(\frac{7}{3}\) on the number line? It is at \(2\frac{1}{3}\)
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For Exercises 25 – 28, find the value of each expression.

25) \( \frac{2}{3} - \frac{1}{6} + \frac{3}{2} = 2 \)

26) \( \frac{3}{4} - \frac{2}{3} + \frac{1}{6} = \frac{1}{4} \)

27) \( \frac{9}{7} - \frac{1}{2} - \frac{3}{4} = \frac{1}{28} \)

28) \( \frac{13}{8} - \frac{1}{5} - \frac{3}{4} = \frac{27}{40} \)

37) \( \frac{5}{5} + \frac{4}{6} - \frac{2}{3} = 3 \frac{29}{30} \)

38) \( \frac{2}{3} - \frac{7}{8} + \frac{9}{4} = 10 \frac{1}{24} \)

For Exercises 39 – 44, evaluate each expression by first changing the mixed numbers to improper fractions. Write your final answer in mixed number format.

39) \( \frac{3}{10} + \frac{2}{3} = \frac{5}{6} \)

40) \( \frac{5}{6} - \frac{2}{3} = \frac{1}{6} \)

41) \( \frac{6}{3} + \frac{4}{3} = 2 \frac{1}{3} - \frac{1}{4} \)

42) \( \frac{10}{23} - \frac{1}{4} = \frac{1}{12} \)

43) \( 6 - \frac{7}{10} + \frac{4}{5} = \frac{5}{10} \)

44) \( \frac{8}{3} - 5 + 7 = 10 \frac{3}{10} \)