

Objective 1: SUBTRACT LIKE FRACTIONS

If the denominator (bottoms) of the fractions are alike, subtract the numerators (tops) and keep the common denominator.

Remember to reduce the answer to lowest terms.

$$\text{Ex. 1} \quad \frac{6}{7} - \frac{1}{7} = \frac{6-1}{7} = \frac{5}{7}$$

$$\text{Ex. 2} \quad \frac{5}{9} - \frac{2}{9} = \frac{5-2}{9} = \frac{3}{9} = \frac{1}{3}$$

$$\text{Ex. 3} \quad \frac{6}{11} - \frac{5}{11} = \frac{1}{11}$$

PRACTICE: SUBTRACT THE FRACTIONS

$$1. \quad \frac{8}{15} - \frac{7}{15} =$$

$$2. \quad \frac{9}{11} - \frac{2}{11}$$

$$3. \quad \frac{4}{5} - \frac{3}{5} =$$

$$4. \quad \frac{7}{12} - \frac{5}{12} =$$

Objective 2: SUBTRACT UNLIKE FRACTIONS

If the denominators (bottoms) of fractions are not the same:

1. The fractions must be changed to obtain fractions with the same denominator. (Remember, when you multiply both the top and bottom of any fraction by the same number, but not zero, the result is an equivalent fraction.)

Example: $\frac{2}{3} - \frac{1}{2}$ lowest common denominator (LCD) is 6.

1. Obtain equivalent fractions with the common denominator of 6:

$$\frac{2}{3} = \frac{2(2)}{3(2)} = \frac{4}{6} \qquad \frac{1}{2} = \frac{1(3)}{2(3)} = \frac{3}{6}$$

2. Subtract the numerators and keep the denominators. $\frac{4}{6} - \frac{3}{6} = \frac{1}{6}$

3. Reduce to lowest terms (if necessary).

Ex. 1. $\frac{5}{6} - \frac{1}{4} = \frac{5(2)}{6(2)} - \frac{1(3)}{4(3)} = \frac{10}{12} - \frac{3}{12} = \frac{7}{12}$
(LCD = 12)

Ex. 2. $\frac{2}{3} - \frac{1}{5} = \frac{2(5)}{3(5)} - \frac{1(3)}{5(3)} = \frac{10}{15} - \frac{3}{15} = \frac{7}{15}$
(LCD = 15)

Ex. 3. $\frac{1}{5} - \frac{1}{6} = \frac{1(6)}{5(6)} - \frac{1(5)}{6(5)} = \frac{6}{30} - \frac{5}{30} = \frac{1}{30}$
(LCD = 30)

$$\text{Ex. 4. } \frac{1}{2} - \frac{2}{5} = \frac{1(5)}{2(5)} - \frac{2(2)}{5(2)} = \frac{5}{10} - \frac{4}{10} = \frac{1}{10}$$

(LCD = 10)

$$\text{Ex. 5. } \frac{5}{6} - \frac{1}{8} = \frac{5(4)}{6(4)} - \frac{1(3)}{8(3)} = \frac{20}{24} - \frac{3}{24} = \frac{17}{24}$$

(LCD = 24)

PRACTICE: SUBTRACT THE FRACTIONS

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

$$2. \frac{6}{7} - \frac{2}{3} =$$

$$3. \frac{2}{5} - \frac{3}{8}$$

$$4. \frac{3}{7} - \frac{1}{6}$$

$$5. \frac{2}{5} - \frac{2}{9} =$$

ANSWERS TO PRACTICE PROBLEMS

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$$1. \frac{1}{15} \quad 2. \frac{7}{11} \quad 3. \frac{1}{5} \quad 4. \frac{2}{12} = \frac{1}{6}$$

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$$1. \frac{3}{4} - \frac{2}{4} = \frac{1}{4} \quad 2. \frac{18}{21} - \frac{14}{21} = \frac{4}{21} \quad 3. \frac{16}{40} - \frac{15}{40} = \frac{1}{40}$$

$$4. \frac{18}{42} - \frac{7}{42} = \frac{11}{42} \quad 5. \frac{18}{45} - \frac{10}{45} = \frac{8}{45}$$