Fractions
Practice Problems

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PRACTICE PROBLEMS 3.1: Naming Fractions

☐ Write the denominator that corresponds to each of the following figures:

1. \( \frac{1}{\phantom{0}} \)
2. \( \frac{1}{\phantom{0}} \)
3. \( \frac{1}{\phantom{0}} \)
4. \( \frac{1}{\phantom{0}} \)

☐ Which figure represents the fraction given?

5. \( \frac{1}{4} \):
   - ANS ___
   (a)  
   (b)  
   (c)  
   (d)  

6. \( \frac{6}{10} \):
   - ANS ___
   (a)  
   (b)  
   (c)  
   (d)  

7. \( \frac{2}{3} \):
   - ANS ___
   (a)  
   (b)  
   (c)  
   (d)  

☐ In the following problems, write the fraction that represents the shaded area.

8. ANS ___
9. ANS ___
10. ANS ___
PRACTICE PROBLEMS 3.2: Equivalent Fractions

☐ Write two equivalent fractions that represent the shaded areas in each figure below.

1. \[ \frac{2}{8} = \frac{6}{24} \]

2. \[ \text{[Diagram]} \]

☐ Give two equivalent fractions (using multiplication) for the fraction \( \frac{5}{7} \).

3. \[ \frac{5}{7} \times \frac{2}{2} = \frac{10}{14} \]

☐ Find two equivalent fractions (using division) for the fraction \( \frac{132}{231} \).

4. \[ \frac{132}{231} \div \frac{12}{12} = \frac{11}{19} \]

☐ Are the pairs of fractions shown below equivalent fractions? If yes, what is their cross product?

5. \[ \frac{2}{8} = \frac{6}{24} \]

Cross Product 12

6. \[ \frac{3}{4} = \frac{8}{12} \]

Cross Product 24

7. \[ \frac{5}{6} = \frac{125}{150} \]

Cross Product

8. \[ \frac{3}{5} = \frac{27}{45} \]

Cross Product
PRACTICE PROBLEMS 3.3: Reducing Fractions

Reduce each fraction to lowest terms:

1. \( \frac{18}{24} = \) 
2. \( \frac{20}{44} = \) 
3. \( \frac{6}{15} = \) 

4. \( \frac{25}{75} = \) 
5. \( \frac{21}{35} = \) 
6. \( \frac{18}{56} = \) 

7. \( \frac{12}{40} = \) 
8. \( \frac{6}{16} = \) 
9. \( \frac{90}{120} = \) 

10. \( \frac{72}{189} = \)
PRACTICE PROBLEMS 3.4: Lowest Common Denominators

Use the factoring method to determine the lowest common denominator for each group of fractions given below.

1. \[ \frac{1}{6}, \frac{2}{9}, \frac{5}{18} \] LCD = ______

2. \[ \frac{3}{5}, \frac{7}{8}, \frac{9}{16} \] LCD = ______

3. \[ \frac{3}{8}, \frac{7}{12}, \frac{5}{6} \] LCD = ______

4. \[ \frac{2}{3}, \frac{1}{4}, \frac{4}{5} \] LCD = ______

5. \[ \frac{3}{4}, \frac{7}{10}, \frac{5}{12} \] LCD = ______

Find the LCD, then convert the fractions to like fractions.

6. \[ \frac{1}{2}, \frac{3}{8}, \frac{7}{12} \] = ____________

7. \[ \frac{2}{3}, \frac{4}{9}, \frac{4}{12} \] = ____________

8. \[ \frac{2}{5}, \frac{5}{6}, \frac{9}{15} \] = ____________

9. \[ \frac{5}{12}, \frac{3}{16}, \frac{7}{8} \] = ____________

10. \[ \frac{2}{3}, \frac{1}{2}, \frac{5}{6} \] = ____________
PRACTICE PROBLEMS 3.5: Improper Fractions and Mixed Numbers

1. Write a mixed number for the part that is shaded. Reduce the fractional part to lowest terms.

2. Write each mixed number as an improper fraction.

3. \(2 \frac{5}{8} = \) _____
4. \(4 \frac{4}{5} = \) _____
5. \(3 \frac{1}{9} = \) _____
6. \(16 \frac{3}{4} = \) _____

7. Write each improper fraction as a whole number or mixed number in lowest terms.

8. \(\frac{98}{11} = \) _____
9. \(\frac{19}{8} = \) _____
10. \(\frac{19}{6} = \) _____
PRACTICE PROBLEMS 3.6: Addition and Subtraction of Fractions or Mixed Numbers

☐ Add or subtract as indicated. Reduce your answers to lowest terms.

1. \( \frac{8}{9} + \frac{7}{8} = \) 

2. \( \frac{1}{2} + \frac{3}{4} + \frac{5}{6} = \) 

3. \( 6\frac{1}{3} + 3\frac{1}{4} = \) 

4. \( \frac{1}{2} + \frac{2}{3} = \) 

5. \( \frac{1}{4} + \frac{5}{6} = \) 

6. \( 11\frac{1}{7} - 4\frac{1}{8} = \) 

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

8. \( \frac{9}{7} - \frac{24}{78} = \) 

9. \( 18\frac{8}{13} - 17\frac{1}{2} = \) 

10. \( 20\frac{1}{3} + 15\frac{4}{21} = \) 

PRACTICE PROBLEMS 3.7: Multiplication of Fractions and Mixed Numbers

Multiply as indicated, using cancellation of common factors when possible, and reduce your answers to lowest terms.

1. \( \frac{2}{3} \times \frac{1}{3} = \) 

2. \( \frac{7}{8} \times \frac{11}{49} = \) 

3. \( \frac{15}{16} \times \frac{48}{6} = \) 

4. \( \frac{3}{2} \times \frac{3}{4} = \) 

5. \( \frac{3}{3} \times 15 = \) 

6. \( \frac{1}{7} \) of \( 2\frac{1}{2} = \) 

7. \( 8 \times 7\frac{9}{12} = \) 

8. \( 9\frac{3}{8} \times 5 = \) 

9. \( \frac{5}{6} \times \frac{9}{5} = \) 

10. \( \frac{7}{8} \times 10 \times \frac{4}{21} \times \frac{2}{15} = \)
PRACTICE PROBLEMS 3.8: Division by Fractions and Mixed Numbers

Complete the following problems. Reduce your answer to lowest terms.

1. \( \frac{3}{5} \div \frac{10}{4} = \) 

2. \( 4 \div 11\frac{2}{9} = \) 

3. \( \frac{7}{8} + \frac{14}{24} = \) 

4. \( \frac{2}{3} + \frac{1}{5} = \) 

5. \( 8\frac{3}{7} \div 5 = \) 

6. \( \frac{1}{5} + 2\frac{5}{13} = \) 

7. \( 1\frac{1}{8} + \frac{5}{16} = \) 

8. \( \frac{7}{16} + \frac{7}{8} = \) 

9. \( \frac{2}{7} + \frac{16}{21} = \) 

10. \( 12\frac{4}{5} + 3\frac{3}{8} = \)