

## Converting Base-10 Fractions

**1** Convert this fraction into a decimal.

$$\frac{6}{10} = \underline{\quad}$$

**2** Convert this fraction into a decimal.

$$\frac{15}{100} = \underline{\quad}$$

**3** Convert this fraction into a decimal.

$$\frac{42}{1000} = \underline{\quad}$$

**4** Convert these fractions into decimals.

$$\frac{1}{10}$$

$$\frac{1}{100}$$

$$\frac{1}{1000}$$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**5** Convert this fraction into a decimal.

$$\frac{168}{100} = \underline{\quad}$$

**6** Convert this decimal into a fraction.

$$0.3 = \underline{\quad}$$

**7** Convert this decimal into a fraction.

$$0.27 = \underline{\quad}$$

**8** Convert this decimal into a fraction.

$$0.384 = \underline{\quad}$$

**9** Convert this decimal into a fraction.

$$0.05 = \underline{\quad}$$

**10** Convert this decimal into a fraction.

$$11.72 = \underline{\quad}$$

## Converting Tenths to Decimals

F-TEN 1

**Instructions:** Write each fraction as a decimal number. (Then try it without the number place boxes in the second half of the exercise set.)

1  $\frac{5}{10} = \square.\square$

2  $\frac{9}{10} = \square.\square$

3  $\frac{8}{10} = \square.\square$

4  $\frac{0}{10} = \square.\square$

5  $\frac{3}{10} = \square.\square$

6  $\frac{6}{10} = \square.\square$

7  $\frac{1}{10} = \square.\square$

8  $\frac{4}{10} = \square.\square$

9  $\frac{7}{10} = \square.\square$

10  $\frac{2}{10} = \square.\square$

11  $\frac{4}{10} = \underline{\quad}$

12  $\frac{7}{10} = \underline{\quad}$

13  $\frac{5}{10} = \underline{\quad}$

14  $\frac{2}{10} = \underline{\quad}$

15  $\frac{9}{10} = \underline{\quad}$

16  $\frac{6}{10} = \underline{\quad}$

17  $\frac{1}{10} = \underline{\quad}$

18  $\frac{8}{10} = \underline{\quad}$

19  $\frac{0}{10} = \underline{\quad}$

20  $\frac{3}{10} = \underline{\quad}$

## Converting Hundredths to Decimals

F-TEN 2

**Instructions:** Write each fraction as a decimal number.

1  $\frac{4}{100} = \underline{\hspace{1cm}} \textcolor{red}{0.04}$

2  $\frac{20}{100} = \underline{\hspace{1cm}}$

3  $\frac{22}{100} = \underline{\hspace{1cm}}$

4  $\frac{79}{100} = \underline{\hspace{1cm}}$

5  $\frac{10}{100} = \underline{\hspace{1cm}}$

6  $\frac{85}{100} = \underline{\hspace{1cm}}$

7  $\frac{8}{100} = \underline{\hspace{1cm}}$

8  $\frac{15}{100} = \underline{\hspace{1cm}}$

9  $\frac{50}{100} = \underline{\hspace{1cm}}$

10  $\frac{63}{100} = \underline{\hspace{1cm}}$

11  $\frac{42}{100} = \underline{\hspace{1cm}}$

12  $\frac{41}{100} = \underline{\hspace{1cm}}$

13  $\frac{9}{100} = \underline{\hspace{1cm}}$

14  $\frac{17}{100} = \underline{\hspace{1cm}}$

15  $\frac{1}{100} = \underline{\hspace{1cm}}$

16  $\frac{7}{100} = \underline{\hspace{1cm}}$

17  $\frac{75}{100} = \underline{\hspace{1cm}}$

18  $\frac{33}{100} = \underline{\hspace{1cm}}$

19  $\frac{38}{100} = \underline{\hspace{1cm}}$

20  $\frac{99}{100} = \underline{\hspace{1cm}}$

## Converting Thousandths to Decimals

F-TEN 3

**Instructions:** Write each fraction as a decimal number.

1  $\frac{8}{1,000} = \underline{\hspace{2cm}}$

2  $\frac{99}{1,000} = \underline{\hspace{2cm}}$

3  $\frac{155}{1,000} = \underline{\hspace{2cm}}$

4  $\frac{737}{1,000} = \underline{\hspace{2cm}}$

5  $\frac{38}{1,000} = \underline{\hspace{2cm}}$

6  $\frac{290}{1,000} = \underline{\hspace{2cm}}$

7  $\frac{25}{1,000} = \underline{\hspace{2cm}}$

8  $\frac{10}{1,000} = \underline{\hspace{2cm}}$

9  $\frac{570}{1,000} = \underline{\hspace{2cm}}$

10  $\frac{16}{1,000} = \underline{\hspace{2cm}}$

11  $\frac{345}{1,000} = \underline{\hspace{2cm}}$

12  $\frac{999}{1,000} = \underline{\hspace{2cm}}$

13  $\frac{30}{1,000} = \underline{\hspace{2cm}}$

14  $\frac{100}{1,000} = \underline{\hspace{2cm}}$

15  $\frac{700}{1,000} = \underline{\hspace{2cm}}$

16  $\frac{55}{1,000} = \underline{\hspace{2cm}}$

17  $\frac{1}{1,000} = \underline{\hspace{2cm}}$

18  $\frac{605}{1,000} = \underline{\hspace{2cm}}$

19  $\frac{48}{1,000} = \underline{\hspace{2cm}}$

20  $\frac{180}{1,000} = \underline{\hspace{2cm}}$



## Converting Fractions to Decimals - Mixed Practice

F-TEN 4

**Instructions:** Write each fraction as a decimal number.

1  $\frac{47}{100} = \underline{\hspace{2cm}}$

2  $\frac{125}{1,000} = \underline{\hspace{2cm}}$

3  $\frac{80}{1,000} = \underline{\hspace{2cm}}$

4  $\frac{95}{100} = \underline{\hspace{2cm}}$

5  $\frac{6}{10} = \underline{\hspace{2cm}}$

6  $\frac{35}{100} = \underline{\hspace{2cm}}$

7  $\frac{482}{1,000} = \underline{\hspace{2cm}}$

8  $\frac{2}{10} = \underline{\hspace{2cm}}$

9  $\frac{9}{10} = \underline{\hspace{2cm}}$

10  $\frac{36}{1,000} = \underline{\hspace{2cm}}$

11  $\frac{86}{100} = \underline{\hspace{2cm}}$

12  $\frac{360}{1,000} = \underline{\hspace{2cm}}$

13  $\frac{70}{1,000} = \underline{\hspace{2cm}}$

14  $\frac{21}{100} = \underline{\hspace{2cm}}$

15  $\frac{75}{100} = \underline{\hspace{2cm}}$

16  $\frac{5}{1,000} = \underline{\hspace{2cm}}$

17  $\frac{12}{100} = \underline{\hspace{2cm}}$

18  $\frac{5}{10} = \underline{\hspace{2cm}}$

19  $\frac{8}{10} = \underline{\hspace{2cm}}$

20  $\frac{5}{100} = \underline{\hspace{2cm}}$

21  $\frac{65}{100} = \underline{\hspace{2cm}}$

22  $\frac{874}{1,000} = \underline{\hspace{2cm}}$

23  $\frac{510}{1,000} = \underline{\hspace{2cm}}$

24  $\frac{37}{100} = \underline{\hspace{2cm}}$

## Converting Decimals to Fractions

F-TEN 5

**Instructions:** Convert these decimals into fractions.

**Examples**

$$0.7 = \frac{7}{10}$$

one place  
one zero

$$0.72 = \frac{72}{100}$$

two places  
two zeros

$$0.725 = \frac{725}{1000}$$

three places  
three zeros

1       $0.1 = \underline{\quad}$

2       $0.250 = \underline{\quad}$

3       $0.29 = \underline{\quad}$

4       $0.80 = \underline{\quad}$

5       $0.015 = \underline{\quad}$

6       $0.97 = \underline{\quad}$

7       $0.4 = \underline{\quad}$

8       $0.107 = \underline{\quad}$

9       $0.25 = \underline{\quad}$

10      $0.3 = \underline{\quad}$

11      $0.312 = \underline{\quad}$

12      $0.61 = \underline{\quad}$

13      $0.070 = \underline{\quad}$

14      $0.552 = \underline{\quad}$

15      $0.43 = \underline{\quad}$

16      $0.2 = \underline{\quad}$

17      $0.8 = \underline{\quad}$

18      $0.010 = \underline{\quad}$

19      $0.09 = \underline{\quad}$

20      $0.349 = \underline{\quad}$



## Converting Any Fraction

- 1** Convert the fraction into a decimal by dividing.

$$\frac{4}{5} = \underline{\hspace{2cm}}$$

- 2** Convert the fraction into a decimal by dividing.

$$\frac{1}{6} = \underline{\hspace{2cm}}$$

- 3** Convert the fraction into a decimal by dividing.

$$\frac{5}{12} = \underline{\hspace{2cm}}$$

- 4** Convert the fraction into a decimal by dividing.

$$\frac{8}{11} = \underline{\hspace{2cm}}$$

- 5** Convert the fraction into a decimal using a **calculator**.  
Round off to three decimal places.



$$\frac{22}{95} = \underline{\hspace{2cm}}$$

## Converting Any Fraction to a Decimal (by Dividing)

F-CAF 1

**Instructions:** Use 'decimal division' to convert these fractions into decimal values. These all have non-repeating digits. Be sure to show your work!

1  $\frac{2}{5} =$  0.4

2  $\frac{1}{4} =$  \_\_\_\_\_

$$\begin{array}{r} 0.4 \\ 5 \overline{)2.0} \\ -20 \\ \hline 0 \end{array}$$

3  $\frac{3}{4} =$  \_\_\_\_\_

4  $\frac{3}{8} =$  \_\_\_\_\_

5  $\frac{1}{8} =$  \_\_\_\_\_

6  $\frac{5}{8} =$  \_\_\_\_\_



## Repeating Decimals from Fractions

F-CAF 2

**Instructions:** Use 'decimal division' to convert these fractions into decimal values. These all have repeating digits. Be sure to show your work!

**Example**

$$\frac{1}{6} = \underline{0.1\overline{6}}$$

0.166  
6) 1.000  
- 6  
40  
- 36  
40  
- 36  
4

same pattern in division means a repeating decimal

1  $\frac{1}{9} = \underline{\hspace{2cm}}$

2  $\frac{5}{9} = \underline{\hspace{2cm}}$

3  $\frac{5}{12} = \underline{\hspace{2cm}}$

4  $\frac{3}{11} = \underline{\hspace{2cm}}$



## Long Repeating Decimals from Fractions

F-CAF 3

**Instructions:** Use 'decimal division' to convert these fractions into decimal values. These all have long decimal parts, so **round off to three decimal places**. Be sure to show your work!

**Example**

$$\frac{1}{7} = \underline{0.143}$$

$$7) \overline{1.0000}$$

- 7  
 30  
 - 28  
 20  
 - 14  
 60  
 56

let's just stop here and round off our answer

1

$$\frac{3}{7} = \underline{\hspace{2cm}}$$

2

$$\frac{6}{7} = \underline{\hspace{2cm}}$$

3

$$\frac{5}{13} = \underline{\hspace{2cm}}$$

4

$$\frac{2}{17} = \underline{\hspace{2cm}}$$



## Converting with a Calculator

F-CAF 4

**Instructions:** The following fractions have been converted to decimals with a calculator. Round the answers off to **three** decimal places or use the repeat symbol to shorten the answer if you see a repeating pattern.

1  $\frac{2}{7} = 0.2857142\ldots = \underline{\hspace{2cm}}$

2  $\frac{7}{9} = 0.7777777\ldots = \underline{\hspace{2cm}}$

3  $\frac{15}{21} = 0.7142857\ldots = \underline{\hspace{2cm}}$

4  $\frac{19}{33} = 0.5757575\ldots = \underline{\hspace{2cm}}$

5  $\frac{9}{14} = 0.6428571\ldots = \underline{\hspace{2cm}}$

6  $\frac{9}{23} = 0.3913043\ldots = \underline{\hspace{2cm}}$

7  $\frac{8}{11} = 0.7272727\ldots = \underline{\hspace{2cm}}$

8  $\frac{6}{19} = 0.3157894\ldots = \underline{\hspace{2cm}}$

9  $\frac{7}{22} = 0.3181818\ldots = \underline{\hspace{2cm}}$

10  $\frac{11}{12} = 0.9166666\ldots = \underline{\hspace{2cm}}$

**Instructions:** Use a calculator to convert these fractions to decimals. Round off to **three** decimal places or use the repeat symbol if you see a repeating pattern.

1  $\frac{4}{7} = \underline{\hspace{2cm}}$

2  $\frac{12}{17} = \underline{\hspace{2cm}}$

3  $\frac{12}{13} = \underline{\hspace{2cm}}$

4  $\frac{15}{22} = \underline{\hspace{2cm}}$

5  $\frac{10}{11} = \underline{\hspace{2cm}}$

6  $\frac{3}{13} = \underline{\hspace{2cm}}$

7  $\frac{16}{31} = \underline{\hspace{2cm}}$

8  $\frac{4}{3} = \underline{\hspace{2cm}}$



## Comparing Fractions

**1** Compare these fractions:

$$\frac{7}{16} \bigcirc \frac{9}{16}$$

**2** Compare these fractions:

$$\frac{3}{20} \bigcirc \frac{2}{20}$$

**3** Compare these fractions:

$$\frac{5}{6} \bigcirc \frac{7}{8}$$

**4** Compare these fractions:

$$\frac{3}{4} \bigcirc \frac{9}{12}$$

**5** Compare these fractions:

$$\frac{8}{11} \bigcirc \frac{3}{5}$$

**6** Compare these fractions:

$$\frac{4}{10} \bigcirc \frac{5}{12}$$

**7** Compare these fractions:



$$\frac{8}{23} \bigcirc \frac{5}{17}$$

**8** Compare these fractions:



$$\frac{5}{16} \bigcirc \frac{20}{64}$$

**9** Convert to decimals to compare:



$$\frac{2}{17} \bigcirc \frac{3}{19}$$

**10** Convert to decimals to compare:



$$\frac{7}{32} \bigcirc \frac{5}{29}$$

## Comparing ‘Like’ Fractions

F-COM 1

**Instructions:** Compare these ‘like’ fractions. Write the greater than (>), less than (<) or equal to (=) sign in the circle provided.

1  $\frac{5}{6}$   $\frac{3}{6}$

2  $\frac{9}{10}$   $\frac{9}{10}$

3  $\frac{4}{15}$   $\frac{5}{15}$

4  $\frac{7}{9}$   $\frac{8}{9}$

5  $\frac{14}{135}$   $\frac{60}{135}$

6  $\frac{71}{25}$   $\frac{17}{25}$

7  $\frac{55}{100}$   $\frac{35}{100}$

8  $\frac{16}{30}$   $\frac{8}{30}$

9  $\frac{30}{72}$   $\frac{30}{72}$

10  $\frac{10}{8}$   $\frac{8}{8}$

11  $\frac{6}{11}$   $\frac{12}{11}$

12  $\frac{5}{280}$   $\frac{2}{280}$

13  $\frac{1}{16}$   $\frac{2}{16}$

14  $\frac{72}{365}$   $\frac{72}{365}$

15  $\frac{70}{495}$   $\frac{75}{495}$

16  $\frac{4}{500}$   $\frac{44}{500}$

17  $\frac{98}{750}$   $\frac{99}{750}$

18  $\frac{80}{99}$   $\frac{64}{99}$



## Comparing Fractions by Cross Multiplying

F-COM 2

**Instructions:** Compare these fractions using the cross multiplying procedure you learned in the video. Write the greater than (>), less than (<) or equal to (=) sign in the circle provided.

1      15       $\frac{3}{4}$   $\bigcirc$   $\frac{2}{5}$  8

2       $\frac{3}{12}$   $\bigcirc$   $\frac{2}{8}$

3       $\frac{2}{3}$   $\bigcirc$   $\frac{1}{2}$

4       $\frac{5}{30}$   $\bigcirc$   $\frac{2}{10}$

5       $\frac{5}{6}$   $\bigcirc$   $\frac{6}{7}$

6       $\frac{4}{10}$   $\bigcirc$   $\frac{7}{20}$

7       $\frac{5}{8}$   $\bigcirc$   $\frac{6}{9}$

8       $\frac{12}{5}$   $\bigcirc$   $\frac{11}{6}$

9       $\frac{10}{11}$   $\bigcirc$   $\frac{9}{10}$

10      $\frac{12}{15}$   $\bigcirc$   $\frac{10}{12}$

11      $\frac{8}{5}$   $\bigcirc$   $\frac{4}{3}$

12      $\frac{5}{6}$   $\bigcirc$   $\frac{80}{100}$

13      $\frac{3}{12}$   $\bigcirc$   $\frac{2}{10}$

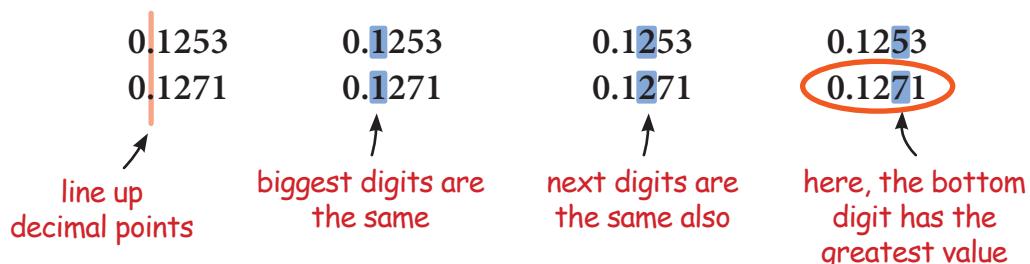
14      $\frac{25}{10}$   $\bigcirc$   $\frac{11}{4}$



## Comparing Decimal Numbers

F-COM 3

**Review:** To compare two decimal numbers, first line up the decimal points. Start by comparing the digits in the biggest number place that is not just zeros. If the digits are the same, move to the next biggest number place (to the right) and compare those digits. Keep doing this until you find that one number has a digit that is greater than the other in the *same number place*. The number with the greatest digit is the greatest (or largest) of the two numbers.



**Instructions:** Compare each pair of decimal numbers and circle the one that is greatest.

1 **0.17**  
0.15

2 10.9  
10.1

3 0.05  
0.001

4 1.025  
0.925

5 0.4848  
0.4849

6 10.075  
10.070

7 0.6475  
0.5677

8 0.909  
0.999

9 1.250  
1.255

10 1.08  
0.99

11 0.750  
0.850

12 0.5871  
0.6879

13 0.125  
0.250

14 0.11111  
0.11121

15 2.6501  
2.6510



## Comparing Fractions by Their Decimal Values

F-COM 4

**Instructions:** Use a calculator to convert these fractions to decimals. (Round off to 3 decimal places.) Then compare the decimals to see which fraction has the greatest value and circle that fraction.

1  $\frac{12}{15} = \underline{\hspace{2cm}}$

$\frac{7}{8} = \underline{\hspace{2cm}}$

2  $\frac{3}{16} = \underline{\hspace{2cm}}$

$\frac{5}{32} = \underline{\hspace{2cm}}$

3  $\frac{11}{13} = \underline{\hspace{2cm}}$

$\frac{14}{17} = \underline{\hspace{2cm}}$

4  $\frac{9}{20} = \underline{\hspace{2cm}}$

$\frac{10}{22} = \underline{\hspace{2cm}}$

5  $\frac{11}{25} = \underline{\hspace{2cm}}$

$\frac{7}{15} = \underline{\hspace{2cm}}$

6  $\frac{33}{9} = \underline{\hspace{2cm}}$

$\frac{22}{7} = \underline{\hspace{2cm}}$

7  $\frac{12}{5} = \underline{\hspace{2cm}}$

$\frac{15}{7} = \underline{\hspace{2cm}}$

8  $\frac{18}{55} = \underline{\hspace{2cm}}$

$\frac{40}{112} = \underline{\hspace{2cm}}$

9  $\frac{2}{77} = \underline{\hspace{2cm}}$

$\frac{1}{35} = \underline{\hspace{2cm}}$

10  $\frac{6}{125} = \underline{\hspace{2cm}}$

$\frac{3}{65} = \underline{\hspace{2cm}}$

11  $\frac{5}{39} = \underline{\hspace{2cm}}$

$\frac{20}{151} = \underline{\hspace{2cm}}$

12  $\frac{42}{45} = \underline{\hspace{2cm}}$

$\frac{85}{91} = \underline{\hspace{2cm}}$



## Multiplying Fractions

**1**

$$\frac{1}{5} \times \frac{2}{3}$$

**2**

$$\frac{3}{8} \times \frac{5}{6}$$

**3**

$$\frac{4}{10} \times \frac{5}{9}$$

**4**

$$\frac{4}{9} \times \frac{5}{2}$$

**5**

$$\frac{1}{2} \times \frac{3}{5} \times \frac{2}{5}$$

**6**

$$\frac{1}{2} \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3}$$

**7**

$$\frac{2}{15} \times 4$$

**8**

$$\frac{3}{4} \times \frac{4}{3}$$

**9**

What is  $\frac{1}{2}$  of  $\frac{1}{3}$  ?

**10**

What is  $\frac{1}{2}$  of  $\frac{3}{4}$  ?

## Multiplying Fractions

F-MUL 1

**Instructions:** Use the procedure you learned in the video to multiply these fractions together. You do **not** need to simplify your answers.

1  $\frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$

2  $\frac{1}{2} \times \frac{7}{8} =$

3  $\frac{2}{3} \times \frac{2}{3} =$

4  $\frac{3}{5} \times \frac{4}{6} =$

5  $\frac{1}{4} \times \frac{5}{2} =$

6  $\frac{3}{3} \times \frac{8}{7} =$

7  $\frac{6}{8} \times \frac{2}{5} =$

8  $\frac{1}{2} \times \frac{12}{6} =$

9  $\frac{5}{6} \times \frac{5}{8} =$

10  $\frac{7}{4} \times \frac{6}{4} =$

11  $\frac{4}{7} \times \frac{2}{5} =$

12  $\frac{4}{8} \times \frac{9}{8} =$

13  $\frac{1}{7} \times \frac{1}{4} =$

14  $\frac{4}{10} \times \frac{5}{5} =$

15  $\frac{4}{3} \times \frac{7}{8} =$

16  $\frac{9}{9} \times \frac{2}{9} =$

17  $\frac{0}{4} \times \frac{3}{8} =$

18  $\frac{7}{5} \times \frac{7}{12} =$



## Multiplying Fractions - Set 2

F-MUL 2

**Instructions:** Use the procedure you learned in the video to multiply these fractions. The 'dot' multiplication symbol is used in some problems. You do **not** need to simplify your answers.

1  $\frac{4}{6} \times \frac{4}{5} = \frac{16}{30}$

2  $\frac{3}{4} \times \frac{4}{6} =$

3  $\frac{5}{6} \times \frac{2}{6} =$

4  $\frac{4}{7} \times \frac{1}{8} =$

5  $\frac{4}{7} \times \frac{5}{3} =$

6  $\frac{6}{10} \cdot \frac{9}{7} =$

7  $\frac{7}{6} \times \frac{5}{8} =$

8  $\frac{5}{3} \times \frac{3}{5} =$

9  $\frac{3}{10} \times \frac{3}{4} =$

10  $\frac{9}{5} \times \frac{1}{10} =$

11  $\frac{1}{8} \cdot \frac{10}{5} =$

12  $\frac{5}{8} \cdot \frac{5}{4} =$

13  $\frac{2}{8} \times \frac{8}{2} =$

14  $\frac{3}{7} \cdot \frac{4}{7} =$

15  $\frac{10}{11} \cdot \frac{3}{4} =$

16  $\frac{10}{15} \times \frac{1}{2} =$

17  $\frac{2}{3} \cdot \frac{9}{12} =$

18  $\frac{1}{10} \cdot \frac{1}{10} =$



## With Fractions, “of” Means “times”

F-MUL 3

**Instructions:** Solve these problems. Remember, the word “of” is a hint that you need to multiply the fractions together. You do **not** need to simplify your answers.

1 what is  $\frac{1}{2}$  of  $\frac{3}{4}$  =  $\frac{3}{8}$

2 find  $\frac{2}{3}$  of  $\frac{3}{5}$  \_\_\_\_\_

3 what is  $\frac{1}{2}$  of  $\frac{1}{4}$  \_\_\_\_\_

4 find  $\frac{1}{4}$  of  $\frac{11}{12}$  \_\_\_\_\_

5 what is  $\frac{1}{2}$  of  $\frac{4}{5}$  \_\_\_\_\_

6 find  $\frac{7}{8}$  of  $\frac{8}{7}$  \_\_\_\_\_

7 what is  $\frac{3}{4}$  of  $\frac{2}{5}$  \_\_\_\_\_

8 find  $\frac{1}{5}$  of  $\frac{9}{7}$  \_\_\_\_\_

9 what is  $\frac{4}{5}$  of  $\frac{7}{8}$  \_\_\_\_\_

10 find  $\frac{5}{8}$  of  $\frac{1}{3}$  \_\_\_\_\_

11 what is  $\frac{1}{2}$  of  $\frac{3}{10}$  \_\_\_\_\_

12 find  $\frac{1}{10}$  of  $\frac{3}{7}$  \_\_\_\_\_

13 what is  $\frac{3}{4}$  of  $\frac{3}{4}$  \_\_\_\_\_

14 find  $\frac{2}{6}$  of  $\frac{1}{8}$  \_\_\_\_\_

15 what is  $\frac{6}{10}$  of  $\frac{4}{5}$  \_\_\_\_\_

16 find  $\frac{5}{6}$  of  $\frac{3}{4}$  \_\_\_\_\_



## Multiplying Three or More Fractions

F-MUL 4

**Instructions:** Use the procedure you learned in the video to multiply these fractions together. You do **not** need to simplify your answers.

1  $\frac{2}{3} \times \frac{4}{5} \times \frac{1}{3} = \frac{8}{45}$

2  $\frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} =$

3  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{2}{3} =$

4  $\frac{3}{4} \times \frac{1}{2} \times \frac{3}{4} \times \frac{1}{2} =$

5  $\frac{2}{5} \times \frac{2}{6} \times \frac{2}{1} =$

6  $\frac{7}{10} \times \frac{5}{10} \times \frac{1}{2} =$

7  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} =$

8  $\frac{1}{3} \cdot \frac{1}{3} \cdot \frac{1}{3} \cdot \frac{1}{3} =$

9  $\frac{1}{3} \times \frac{3}{4} \times \frac{1}{2} \times \frac{2}{2} \times \frac{5}{1} =$

10  $\frac{3}{4} \cdot \frac{2}{5} \cdot \frac{3}{4} =$

11  $\frac{5}{3} \cdot \frac{2}{3} \cdot \frac{0}{7} =$

12  $\frac{5}{2} \times \frac{2}{7} \times \frac{1}{2} \times \frac{5}{1} =$

13  $\frac{3}{2} \times \frac{1}{2} \times \frac{4}{5} \times \frac{3}{5} =$

14  $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} =$



## Multiplying a Fraction by a Whole Number

F-MUL 5

**Instructions:** Multiply the fraction and the whole number. You do **not** need to simplify your answers.

1       $2 \times \frac{3}{4} = \frac{6}{4}$

↑  
same as 2 over 1

2       $3 \times \frac{5}{7} =$

3       $5 \times \frac{1}{2} =$

4       $\frac{5}{6} \times 5 =$

5       $2 \times \frac{5}{12} =$

6       $10 \times \frac{1}{3} =$

7       $\frac{4}{5} \times 6 =$

8       $\frac{8}{45} \times 3 =$

9       $7 \times \frac{5}{24} =$

10      $\frac{6}{21} \times 6 =$

11      $\frac{2}{5} \times 2 =$

12      $2 \times \frac{6}{11} =$

13      $\frac{7}{32} \times 3 =$

14      $7 \times \frac{8}{30} =$

15      $0 \times \frac{5}{8} =$

16      $\frac{9}{99} \times 9 =$



## Simplifying Fractions

**1** Simplify this fraction.

$$\frac{6}{30}$$

**2** Simplify this fraction.

$$\frac{15}{20}$$

**3** Simplify this fraction.

$$\frac{8}{48}$$

**4** Simplify this fraction.

$$\frac{9}{36}$$

**5** Simplify this fraction.

$$\frac{49}{84}$$

**6** Simplify this fraction.

$$\frac{54}{27}$$

**7** Simplify this fraction.

$$\frac{24}{36}$$

**8** Simplify this fraction.

$$\frac{50}{250}$$

## Simplifying Fractions

F-SIM 1

**Instructions:** Simplify these fractions using the procedure you learned in the video. Cancel common factors and remultiply any remaining factors to get your final answer.

1  $\frac{12}{14} = \frac{\cancel{2}\times\cancel{2}\times3}{\cancel{2}\times7} = \frac{6}{7}$

2  $\frac{5}{10} = \underline{\hspace{2cm}} =$

3  $\frac{6}{9} = \underline{\hspace{2cm}} =$

4  $\frac{9}{12} = \underline{\hspace{2cm}} =$

5  $\frac{7}{21} = \underline{\hspace{2cm}} =$

6  $\frac{14}{16} = \underline{\hspace{2cm}} =$

7  $\frac{7}{14} = \underline{\hspace{2cm}} =$

8  $\frac{15}{40} = \underline{\hspace{2cm}} =$

9  $\frac{5}{20} = \underline{\hspace{2cm}} =$

10  $\frac{22}{44} = \underline{\hspace{2cm}} =$

11  $\frac{8}{12} = \underline{\hspace{2cm}} =$

12  $\frac{20}{24} = \underline{\hspace{2cm}} =$

13  $\frac{10}{15} = \underline{\hspace{2cm}} =$

14  $\frac{25}{30} = \underline{\hspace{2cm}} =$

15  $\frac{18}{24} = \underline{\hspace{2cm}} =$

16  $\frac{16}{36} = \underline{\hspace{2cm}} =$

17  $\frac{10}{25} = \underline{\hspace{2cm}} =$

18  $\frac{35}{50} = \underline{\hspace{2cm}} =$



## Simplifying Fractions - Set 2

F-SIM 2

**Instructions:** Simplify these fractions using the procedure you learned in the video. Cancel any common factors and remultiply remaining factors to get your final answer.

1  $\frac{15}{20} = \frac{3 \times 5}{2 \times 2 \times 5} = \frac{3}{4}$

2  $\frac{16}{30} = \frac{\text{_____}}{\text{_____}} =$

3  $\frac{12}{18} = \frac{\text{_____}}{\text{_____}} =$

4  $\frac{15}{45} = \frac{\text{_____}}{\text{_____}} =$

5  $\frac{20}{25} = \frac{\text{_____}}{\text{_____}} =$

6  $\frac{27}{39} = \frac{\text{_____}}{\text{_____}} =$

7  $\frac{14}{21} = \frac{\text{_____}}{\text{_____}} =$

8  $\frac{48}{72} = \frac{\text{_____}}{\text{_____}} =$

9  $\frac{20}{32} = \frac{\text{_____}}{\text{_____}} =$

10  $\frac{32}{40} = \frac{\text{_____}}{\text{_____}} =$

11  $\frac{18}{36} = \frac{\text{_____}}{\text{_____}} =$

12  $\frac{45}{125} = \frac{\text{_____}}{\text{_____}} =$

13  $\frac{42}{63} = \frac{\text{_____}}{\text{_____}} =$

14  $\frac{63}{105} = \frac{\text{_____}}{\text{_____}} =$

15  $\frac{60}{75} = \frac{\text{_____}}{\text{_____}} =$

16  $\frac{42}{140} = \frac{\text{_____}}{\text{_____}} =$

17  $\frac{36}{84} = \frac{\text{_____}}{\text{_____}} =$

18  $\frac{33}{121} = \frac{\text{_____}}{\text{_____}} =$



## Simpler Simplifying

F-SIM 3

**Instructions:** Simplify these fractions using the procedure you learned in the video. Look for **composite** common factors like 4, 6, 8 or 10 that will save you some steps.

1  $\frac{10}{20} = \frac{1 \times 10}{2 \times 10} = \frac{1}{2}$

2  $\frac{12}{16} = \underline{\hspace{2cm}} =$

3  $\frac{6}{12} = \underline{\hspace{2cm}} =$

4  $\frac{10}{60} = \underline{\hspace{2cm}} =$

5  $\frac{30}{40} = \underline{\hspace{2cm}} =$

6  $\frac{24}{40} = \underline{\hspace{2cm}} =$

7  $\frac{16}{20} = \underline{\hspace{2cm}} =$

8  $\frac{32}{56} = \underline{\hspace{2cm}} =$

9  $\frac{8}{12} = \underline{\hspace{2cm}} =$

10  $\frac{30}{80} = \underline{\hspace{2cm}} =$

11  $\frac{40}{64} = \underline{\hspace{2cm}} =$

12  $\frac{18}{30} = \underline{\hspace{2cm}} =$

13  $\frac{60}{70} = \underline{\hspace{2cm}} =$

14  $\frac{24}{36} = \underline{\hspace{2cm}} =$

15  $\frac{30}{36} = \underline{\hspace{2cm}} =$

16  $\frac{40}{60} = \underline{\hspace{2cm}} =$

17  $\frac{18}{24} = \underline{\hspace{2cm}} =$

18  $\frac{64}{72} = \underline{\hspace{2cm}} =$



## Could it be Simpler?

F-SIM 4

**Instructions:** Tell whether the fraction could be simplified. Check 'yes' if you think it could be simplified. Check 'no' if you think the fraction is already as simple as it can be.

**Examples**

$$\frac{1}{2}$$

yes  
 no

already as simple as it can be

$$\frac{2}{4}$$

yes  
 no

this can be simplified

1  $\frac{2}{3}$   yes  
 no

2  $\frac{8}{20}$   yes  
 no

3  $\frac{5}{10}$   yes  
 no

4  $\frac{3}{4}$   yes  
 no

5  $\frac{5}{25}$   yes  
 no

6  $\frac{7}{9}$   yes  
 no

7  $\frac{14}{44}$   yes  
 no

8  $\frac{15}{21}$   yes  
 no

9  $\frac{1}{16}$   yes  
 no

10  $\frac{6}{7}$   yes  
 no

11  $\frac{33}{44}$   yes  
 no

12  $\frac{6}{15}$   yes  
 no

13  $\frac{9}{27}$   yes  
 no

14  $\frac{11}{13}$   yes  
 no

15  $\frac{3}{8}$   yes  
 no

16  $\frac{4}{18}$   yes  
 no

17  $\frac{9}{16}$   yes  
 no

18  $\frac{8}{64}$   yes  
 no

19  $\frac{7}{15}$   yes  
 no

20  $\frac{23}{55}$   yes  
 no

21  $\frac{3}{30}$   yes  
 no

22  $\frac{12}{44}$   yes  
 no

23  $\frac{9}{81}$   yes  
 no

24  $\frac{13}{26}$   yes  
 no



## Adding and Subtracting Fractions

**1**  $\frac{1}{7} + \frac{2}{7}$

**2**  $\frac{2}{5} + \frac{3}{5}$

**3**  $\frac{5}{18} + \frac{8}{18}$

**4**  $\frac{8}{9} - \frac{5}{9}$

**5**  $\frac{12}{8} - \frac{10}{8}$

**6**  $\frac{1}{8} + \frac{3}{8} + \frac{2}{8}$

**7**  $\frac{10}{15} - \frac{9}{15} + \frac{6}{15}$

**8**  $\frac{18}{30} - \left( \frac{8}{30} - \frac{1}{30} \right)$

**9**  $\frac{9}{20} - \left( \frac{5}{20} + \frac{1}{20} \right)$

**10**  $\frac{5}{4} - 1$

## Adding ‘Like’ Fractions

F-ASF 1

**Instructions:** Add these ‘like’ fractions using the procedure you learned in the video. You do **not** need to simplify your answers.

$$1 \quad \frac{2}{9} + \frac{5}{9} = \frac{7}{9}$$

$$2 \quad \frac{10}{25} + \frac{4}{25} =$$

$$3 \quad \frac{3}{8} + \frac{2}{8} =$$

$$4 \quad \frac{8}{40} + \frac{15}{40} =$$

$$5 \quad \frac{5}{10} + \frac{4}{10} =$$

$$6 \quad \frac{7}{7} + \frac{1}{7} =$$

$$7 \quad \frac{1}{5} + \frac{1}{5} =$$

$$8 \quad \frac{0}{12} + \frac{10}{12} =$$

$$9 \quad \frac{4}{14} + \frac{9}{14} =$$

$$10 \quad \frac{40}{72} + \frac{21}{72} =$$

$$11 \quad \frac{3}{40} + \frac{6}{40} =$$

$$12 \quad \frac{1}{2} + \frac{8}{2} =$$

$$13 \quad \frac{9}{55} + \frac{9}{55} =$$

$$14 \quad \frac{15}{125} + \frac{45}{125} =$$

$$15 \quad \frac{11}{32} + \frac{16}{32} =$$

$$16 \quad \frac{120}{330} + \frac{55}{330} =$$

$$17 \quad \frac{50}{100} + \frac{25}{100} =$$

$$18 \quad \frac{18}{68} + \frac{32}{68} =$$

$$19 \quad \frac{1}{27} + \frac{26}{27} =$$

$$20 \quad \frac{35}{512} + \frac{180}{512} =$$



## Subtracting ‘Like’ Fractions

F-ASF 2

**Instructions:** Subtract these ‘like’ fractions. You do **not** need to simplify your answers.

$$\text{1} \quad \frac{7}{8} - \frac{4}{8} = \frac{3}{8}$$

$$\text{2} \quad \frac{28}{21} - \frac{8}{21} =$$

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

$$\text{4} \quad \frac{9}{35} - \frac{6}{35} =$$

$$\text{5} \quad \frac{12}{15} - \frac{4}{15} =$$

$$\text{6} \quad \frac{15}{14} - \frac{5}{14} =$$

$$\text{7} \quad \frac{10}{12} - \frac{9}{12} =$$

$$\text{8} \quad \frac{35}{80} - \frac{15}{80} =$$

$$\text{9} \quad \frac{9}{9} - \frac{9}{9} =$$

$$\text{10} \quad \frac{50}{100} - \frac{12}{100} =$$

$$\text{11} \quad \frac{20}{44} - \frac{8}{44} =$$

$$\text{12} \quad \frac{81}{91} - \frac{44}{91} =$$

$$\text{13} \quad \frac{14}{26} - \frac{5}{26} =$$

$$\text{14} \quad \frac{12}{50} - \frac{6}{50} =$$

$$\text{15} \quad \frac{45}{75} - \frac{9}{75} =$$

$$\text{16} \quad \frac{230}{245} - \frac{130}{245} =$$

$$\text{17} \quad \frac{100}{88} - \frac{30}{88} =$$

$$\text{18} \quad \frac{500}{675} - \frac{480}{675} =$$

$$\text{19} \quad \frac{115}{200} - \frac{25}{200} =$$

$$\text{20} \quad \frac{65}{48} - \frac{25}{48} =$$



## Adding and Subtracting ‘Like’ Fractions

F-ASF 1

**Instructions:** Add or subtract these ‘like’ fractions. Pay close attention to the sign (plus or minus). You do **not** need to simplify your answers.

$$\text{1} \quad \frac{8}{10} - \frac{7}{10} = \underline{\frac{1}{10}}$$

$$\text{2} \quad \frac{3}{25} + \frac{30}{25} =$$

$$\text{3} \quad \frac{20}{32} + \frac{7}{32} =$$

$$\text{4} \quad \frac{17}{30} + \frac{5}{30} =$$

$$\text{5} \quad \frac{3}{15} + \frac{3}{15} =$$

$$\text{6} \quad \frac{12}{16} - \frac{11}{16} =$$

$$\text{7} \quad \frac{50}{44} - \frac{48}{44} =$$

$$\text{8} \quad \frac{27}{79} - \frac{23}{79} =$$

$$\text{9} \quad \frac{15}{18} + \frac{4}{18} =$$

$$\text{10} \quad \frac{11}{22} + \frac{10}{22} =$$

$$\text{11} \quad \frac{28}{50} - \frac{16}{50} =$$

$$\text{12} \quad \frac{8}{46} - \frac{3}{46} =$$

$$\text{13} \quad \frac{9}{11} - \frac{6}{11} =$$

$$\text{14} \quad \frac{96}{136} + \frac{6}{136} =$$

$$\text{15} \quad \frac{21}{24} + \frac{20}{24} =$$

$$\text{16} \quad \frac{35}{98} + \frac{35}{98} =$$

$$\text{17} \quad \frac{68}{80} - \frac{50}{80} =$$

$$\text{18} \quad \frac{20}{31} + \frac{13}{31} =$$

$$\text{19} \quad \frac{15}{38} + \frac{5}{38} =$$

$$\text{20} \quad \frac{19}{19} - \frac{8}{19} =$$



## Adding and Subtracting Like Fractions (Multi-Step Problems)

F-ASF 4

**Instructions:** Solve these multi-step problems involving the addition and subtraction of 'like' fractions. Remember the *Order of Operations* rules. You do **not** need to simplify your answers.

$$\text{1} \quad \frac{3}{10} + \frac{6}{10} - \frac{5}{10} = \frac{4}{10}$$

$$\frac{9}{10} - \frac{5}{10} =$$

$$\text{2} \quad \frac{9}{8} - \left( \frac{5}{8} + \frac{1}{8} \right) =$$

$$\text{3} \quad \frac{6}{15} + \frac{7}{15} - \frac{4}{15} =$$

$$\text{4} \quad \frac{50}{61} - \left( \frac{25}{61} - \frac{20}{61} \right) =$$

$$\text{5} \quad \frac{8}{26} + \frac{2}{26} + \frac{7}{26} =$$

$$\text{6} \quad \frac{16}{40} - \left( \frac{5}{40} + \frac{7}{40} \right) =$$

$$\text{7} \quad \frac{15}{20} + \left( \frac{35}{20} - \frac{32}{20} \right) =$$

$$\text{8} \quad \frac{11}{77} + \frac{12}{77} + \frac{13}{77} =$$

$$\text{9} \quad \frac{25}{54} - \frac{10}{54} - \frac{7}{54} =$$

$$\text{10} \quad \frac{45}{82} - \left( \frac{30}{82} + \frac{15}{82} \right) =$$

$$\text{11} \quad \frac{14}{38} + \left( \frac{15}{38} - \frac{7}{38} \right) =$$

$$\text{12} \quad \frac{26}{59} - \frac{6}{59} - \frac{10}{59} =$$



## Finding a Common Denominator: ECD

**1** Find the “Easiest Common Denominator” (ECD) for these two fractions:

$$\frac{3}{4} \text{ and } \frac{1}{5}$$

**2** Find the “Easiest Common Denominator” (ECD) for these two fractions:

$$\frac{5}{6} \text{ and } \frac{2}{3}$$

**3** Convert these to “like” fractions with the ECD method:

$$\frac{1}{4} \text{ and } \frac{2}{3}$$

**4** Convert these to “like” fractions with the ECD method:

$$\frac{3}{7} \text{ and } \frac{1}{2}$$

**5**  $\frac{4}{5} + \frac{1}{2}$

**6**  $\frac{3}{2} - \frac{5}{9}$

**7**  $\frac{1}{3} + \frac{5}{8}$

**8**  $\frac{7}{8} - \frac{2}{5}$

**9**  $\frac{3}{10} + \frac{4}{8}$

**10**  $\frac{9}{15} - \frac{7}{24}$



## Changing ‘Un-Like’ Fractions into ‘Like’ Fractions

F-ECD 1

**Instructions:** Change these ‘un-like’ fractions into ‘like’ fractions using the ECD method you learned in the video. Use the guides to help you. The first one has been done for you.

1       $\frac{1}{2}$        $\frac{3}{5}$

$\frac{5}{5} \times \frac{1}{2}$        $\frac{3}{5} \times \frac{2}{2}$

$\frac{5}{10}$        $\frac{6}{10}$

2       $\frac{5}{6}$        $\frac{1}{4}$

—  $\times \frac{5}{6}$        $\frac{1}{4} \times —$

—      —

3       $\frac{1}{3}$        $\frac{1}{4}$

—  $\times \frac{1}{3}$        $\frac{1}{4} \times —$

—      —

4       $\frac{2}{3}$        $\frac{1}{8}$

—  $\times \frac{2}{3}$        $\frac{1}{8} \times —$

—      —

5       $\frac{2}{7}$        $\frac{1}{2}$

—  $\times \frac{2}{7}$        $\frac{1}{2} \times —$

—      —

6       $\frac{3}{4}$        $\frac{3}{10}$

—  $\times \frac{3}{4}$        $\frac{3}{10} \times —$

—      —

7       $\frac{2}{3}$        $\frac{5}{6}$

—  $\times \frac{2}{3}$        $\frac{5}{6} \times —$

—      —

8       $\frac{3}{5}$        $\frac{7}{9}$

—  $\times \frac{3}{5}$        $\frac{7}{9} \times —$

—      —



## Adding ‘Un-Like’ Fractions Using the ECD Method

F-ECD 2

**Instructions:** Add these ‘un-like’ fractions using the ECD method you learned in the video. Use the guides to help you. You do **not** need to simplify your answers.

1       $\frac{3}{4} + \frac{1}{5}$

$$\frac{5}{5} \times \frac{3}{4} + \frac{1}{5} \times \frac{4}{4}$$

$$\frac{15}{20} + \frac{4}{20} = \frac{19}{20}$$

2       $\frac{2}{5} + \frac{3}{8}$

$$— \times \frac{2}{5} + \frac{3}{8} \times —$$

$$— + — = —$$

3       $\frac{1}{6} + \frac{1}{3}$

$$— \times \frac{1}{6} + \frac{1}{3} \times —$$

$$— + — = —$$

4       $\frac{1}{2} + \frac{5}{8}$

$$— \times \frac{1}{2} + \frac{5}{8} \times —$$

$$— + — = —$$

5       $\frac{4}{5} + \frac{3}{8}$

$$— \times \frac{4}{5} + \frac{3}{8} \times —$$

$$— + — = —$$

6       $\frac{1}{4} + \frac{5}{7}$

$$— \times \frac{1}{4} + \frac{5}{7} \times —$$

$$— + — = —$$

7       $\frac{2}{7} + \frac{1}{3}$

$$— \times \frac{2}{7} + \frac{1}{3} \times —$$

$$— + — = —$$

8       $\frac{2}{9} + \frac{1}{7}$

$$— \times \frac{2}{9} + \frac{1}{7} \times —$$

$$— + — = —$$



## Subtracting ‘Un-Like’ Fractions Using the ECD Method

F-ECD 3

**Instructions:** Subtract these ‘un-like’ fractions using the ECD method you learned in the video. Use the guides to help you. You do **not** need to simplify your answers.

1       $\frac{3}{4} - \frac{2}{6}$

$$\frac{6}{6} \times \frac{3}{4} - \frac{2}{6} \times \frac{4}{4}$$

$$\frac{18}{24} - \frac{8}{24} = \frac{10}{24}$$

2       $\frac{5}{7} - \frac{1}{2}$

$$- \times \frac{5}{7} - \frac{1}{2} \times -$$

$$- - - = - - -$$

3       $\frac{2}{3} - \frac{1}{5}$

$$- \times \frac{2}{3} - \frac{1}{5} \times -$$

$$- - - = - - -$$

4       $\frac{7}{9} - \frac{2}{3}$

$$- \times \frac{7}{9} - \frac{2}{3} \times -$$

$$- - - = - - -$$

5       $\frac{2}{6} - \frac{1}{4}$

$$- \times \frac{2}{6} - \frac{1}{4} \times -$$

$$- - - = - - -$$

6       $\frac{3}{2} - \frac{8}{9}$

$$- \times \frac{3}{2} - \frac{8}{9} \times -$$

$$- - - = - - -$$

7       $\frac{3}{5} - \frac{3}{8}$

$$- \times \frac{3}{5} - \frac{3}{8} \times -$$

$$- - - = - - -$$

8       $\frac{6}{10} - \frac{3}{8}$

$$- \times \frac{6}{10} - \frac{3}{8} \times -$$

$$- - - = - - -$$



## Mixed Practice Using the ECD Method

F-ECD 4

**Instructions:** Add or subtract these ‘un-like’ fractions using the ECD method you learned in the video. Show your work. You do **not** need to simplify your answers.

1       $\frac{2}{3} + \frac{1}{8}$

2       $\frac{4}{3} - \frac{5}{7}$

$$\begin{aligned}\frac{8}{8} \times \frac{2}{3} &+ \frac{1}{8} \times \frac{3}{3} \\ \frac{16}{24} &+ \frac{3}{24} = \left( \frac{19}{24} \right)\end{aligned}$$

3       $\frac{4}{6} - \frac{1}{5}$

4       $\frac{9}{10} - \frac{1}{3}$

5       $\frac{3}{8} + \frac{3}{2}$

6       $\frac{2}{7} + \frac{5}{6}$

7       $\frac{7}{10} - \frac{3}{5}$

8       $\frac{5}{11} + \frac{2}{5}$



## Mixed Practice Using the ECD Method - Set 2

F-ECD 5

**Instructions:** Add or subtract these ‘un-like’ fractions using the ECD method you learned in the video. Show your work. You do **not** need to simplify your answers.

1       $\frac{4}{5} + \frac{1}{2}$

2       $\frac{10}{12} + \frac{2}{3}$

$$\frac{2}{2} \times \frac{4}{5} + \frac{1}{2} \times \frac{5}{5}$$

$$\frac{8}{10} + \frac{5}{10} = \frac{13}{10}$$

3       $\frac{5}{3} - \frac{1}{4}$

4       $\frac{1}{9} + \frac{1}{8}$

5       $\frac{3}{10} + \frac{1}{9}$

6       $\frac{6}{7} + \frac{3}{4}$

7       $\frac{1}{4} - \frac{2}{11}$

8       $\frac{4}{7} - \frac{1}{10}$



## Finding a Common Denominator: LCD

**1** Find the Least Common Multiple (LCM) of 3 and 4

x1	x2	x3	x4	x5	x6

**2** Find the Least Common Denominator (LCD) of:  $\frac{1}{4}$  and  $\frac{1}{5}$

x1	x2	x3	x4	x5	x6

**3**  $\frac{5}{8} + \frac{3}{10}$

**4**  $\frac{1}{2} + \frac{3}{8}$

**5**  $\frac{7}{12} - \frac{1}{6}$

**6**  $\frac{1}{10} + \frac{1}{100}$

**7**  $\frac{2}{3} + \frac{1}{4} + \frac{1}{6}$

## Finding the Least Common Multiple of Two Numbers

F-LCD 1

**Instructions:** For each pair of numbers, fill in a row of the multiples chart by multiplying by 1, 2, 3, 4, etc. As soon as you find a common multiple, circle it. The circled number is the Least Common Multiple (or LCM). You do **not** need to fill up the whole table.

**1** 2 and 3

x1	x2	x3	x4	x5	x6
2	4	6			
3	6				

**2** 3 and 4

x1	x2	x3	x4	x5	x6

**3** 2 and 10

x1	x2	x3	x4	x5	x6

**4** 8 and 10

x1	x2	x3	x4	x5	x6

**5** 4 and 5

x1	x2	x3	x4	x5	x6

**6** 4 and 6

x1	x2	x3	x4	x5	x6

**7** 6 and 8

x1	x2	x3	x4	x5	x6

**8** 3 and 5

x1	x2	x3	x4	x5	x6

**9** 12 and 15

x1	x2	x3	x4	x5	x6

**10** 6 and 21

x1	x2	x3	x4	x5	x6	x7



## Finding the Least Common Denominator (LCD)

F-LCD 2

**Instructions:** Change these ‘un-like’ fractions into ‘like’ fractions using the LCD method. Use the multiples table to help find the LCM of the bottom numbers.

**1**       $\frac{3}{4}$        $\frac{1}{6}$

$\frac{3}{3} \times \frac{3}{4}$        $\frac{1}{6} \times \frac{2}{2}$

$\frac{9}{12}$        $\frac{2}{12}$

4 and 6

x1	x2	x3	x4	x5	x6
4	8	12			
6	12				

LCM becomes the LCD

**2**       $\frac{1}{2}$        $\frac{7}{10}$

—  $\times \frac{1}{2}$        $\frac{7}{10} \times —$

—      —

2 and 10

x1	x2	x3	x4	x5	x6

**3**       $\frac{5}{6}$        $\frac{3}{8}$

—  $\times \frac{5}{6}$        $\frac{3}{8} \times —$

—      —

6 and 8

x1	x2	x3	x4	x5	x6

**4**       $\frac{3}{10}$        $\frac{3}{8}$

—  $\times \frac{3}{10}$        $\frac{3}{8} \times —$

—      —

10 and 8

x1	x2	x3	x4	x5	x6



## Adding & Subtracting Fractions by the LCD Method

F-LCD 3

**Instructions:** Add or subtract these ‘un-like’ fractions. Start by using the LCD Method to turn them into ‘like’ fractions. You do **not** need to simplify your answers.

1       $\frac{2}{3} + \frac{7}{9}$

$$\frac{3}{3} \times \frac{2}{3} + \frac{7}{9} \times \frac{1}{1}$$

$$\frac{6}{9} + \frac{7}{9} = \underline{\underline{\frac{13}{9}}}$$

3 and 9					
x1	x2	x3	x4	x5	x6
3	6	9			
9					

2       $\frac{4}{9} + \frac{1}{12}$

$$\underline{\quad} \times \frac{4}{9} + \frac{1}{12} \times \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

9 and 12					
x1	x2	x3	x4	x5	x6

3       $\frac{7}{12} - \frac{4}{15}$

$$\underline{\quad} \times \frac{7}{12} - \frac{4}{15} \times \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

12 and 15					
x1	x2	x3	x4	x5	x6

4       $\frac{3}{6} - \frac{3}{14}$

$$\underline{\quad} \times \frac{3}{6} - \frac{3}{14} \times \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

6 and 14						
x1	x2	x3	x4	x5	x6	x7



## When 'Un-Like' Denominators are Multiples

F-LCD 4

**Instructions:** Add these 'un-like' fractions using the LCD method. In each problem, one bottom number is a multiple of the other. That means you won't need a table to find the LCM because the bigger bottom number **is** the LCM. You do **not** need to simplify your answers.

1       $\frac{1}{2} + \frac{5}{6}$

$$\frac{3}{3} \times \frac{1}{2} + \frac{5}{6}$$

$\downarrow$

$$\frac{3}{6} + \frac{5}{6} = \frac{8}{6}$$

2       $\frac{1}{8} + \frac{3}{4}$

$$\frac{1}{8} + \frac{3}{4} \times \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

3       $\frac{2}{3} + \frac{2}{9}$

$$\underline{\quad} \times \frac{2}{3} + \frac{2}{9}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

4       $\frac{5}{12} + \frac{2}{6}$

$$\frac{5}{12} + \frac{2}{6} \times \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

5       $\frac{3}{4} + \frac{5}{16}$

$$\underline{\quad} \times \frac{3}{4} + \frac{5}{16}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

6       $\frac{9}{25} + \frac{3}{5}$

$$\frac{9}{25} + \frac{3}{5} \times \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

7       $\frac{4}{3} + \frac{8}{15}$

$$\underline{\quad} \times \frac{4}{3} + \frac{8}{15}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

8       $\frac{5}{21} + \frac{2}{3}$

$$\frac{5}{21} + \frac{2}{3} \times \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



## Un-Guided Practice with the LCD Method

F-LCD 5

**Instructions:** Add or subtract these ‘un-like’ fractions using the LCD method you learned in the video. Show your work and you do **not** need to simplify your answers.

1  $\frac{2}{3} + \frac{1}{6}$

2  $\frac{7}{12} - \frac{1}{6}$

$$\frac{2}{2} \times \frac{2}{3} + \frac{1}{6}$$

$$\frac{4}{6} + \frac{1}{6} = \left( \frac{5}{6} \right)$$

3  $\frac{15}{24} + \frac{5}{8}$

4  $\frac{9}{10} - \frac{1}{5}$

5  $\frac{3}{8} + \frac{3}{2}$

6  $\frac{3}{7} + \frac{5}{14}$

7  $\frac{5}{3} - \frac{3}{4}$

8  $\frac{4}{6} - \frac{3}{8}$



## Un-Guided Practice with the LCD Method - Set 2

F-LCD 6

**Instructions:** Add or subtract these ‘un-like’ fractions using the LCD method you learned in the video. Show your work and you do **not** need to simplify your answers.

1       $\frac{1}{2} + \frac{3}{14}$

2       $\frac{16}{30} + \frac{1}{10}$

$$\frac{7}{7} \times \frac{1}{2} + \frac{3}{14}$$

$$\frac{7}{14} + \frac{3}{14} = \frac{10}{14}$$

3       $\frac{7}{16} - \frac{1}{4}$

4       $\frac{8}{11} - \frac{5}{22}$

5       $\frac{4}{5} + \frac{2}{3}$

6       $\frac{5}{6} - \frac{4}{30}$

7       $\frac{5}{9} - \frac{10}{27}$

8       $\frac{7}{9} - \frac{5}{12}$



## Dividing Fractions

**1** What is the reciprocal of  $\frac{4}{7}$  ?

**2** What is the reciprocal of  $\frac{9}{2}$  ?

**3**  $\frac{1}{2} \div \frac{1}{4}$

**4**  $\frac{5}{7} \div \frac{2}{3}$

**5**  $\frac{3}{5} \div \frac{2}{7}$

**6**  $\frac{1}{2} \div 2$

**7**  $\frac{7}{12} \div 4$

**8**  $6 \div \frac{4}{5}$

**9** 
$$\begin{array}{r} \frac{3}{8} \\ \hline \frac{2}{5} \end{array}$$

**10** 
$$\begin{array}{r} \frac{1}{6} \\ \hline \frac{5}{9} \end{array}$$

## Finding the Reciprocal

F-DIV 1

**Instructions:** Write the reciprocal of each fraction by switching the top and bottom numbers.

1  $\frac{3}{8}$  reciprocal:  $\frac{8}{3}$

2  $\frac{8}{12}$  reciprocal: —

3  $\frac{1}{5}$  reciprocal: —

4  $\frac{6}{15}$  reciprocal: —

5  $\frac{3}{4}$  reciprocal: —

6  $\frac{20}{35}$  reciprocal: —

7  $\frac{2}{7}$  reciprocal: —

8  $\frac{7}{11}$  reciprocal: —

9  $\frac{8}{19}$  reciprocal: —

10  $\frac{12}{32}$  reciprocal: —

**Instructions:** Multiply each fraction by its reciprocal to get a ‘whole fraction’ which is just 1.

1  $\frac{2}{5} \times \frac{5}{2} = \frac{10}{10} = 1$

2  $\frac{4}{5} \times \underline{\quad} = \underline{\quad} = 1$

3  $\frac{4}{7} \times \underline{\quad} = \underline{\quad} = 1$

4  $\frac{5}{3} \times \underline{\quad} = \underline{\quad} = 1$

5  $\frac{3}{7} \times \underline{\quad} = \underline{\quad} = 1$

6  $\frac{1}{11} \times \underline{\quad} = \underline{\quad} = 1$

7  $\frac{6}{8} \times \underline{\quad} = \underline{\quad} = 1$

8  $\frac{7}{9} \times \underline{\quad} = \underline{\quad} = 1$

9  $\frac{2}{9} \times \underline{\quad} = \underline{\quad} = 1$

10  $\frac{3}{12} \times \underline{\quad} = \underline{\quad} = 1$

## Dividing Fractions (Guided Practice)

F-DIV 2

**Instructions:** Solve these division problems by multiplying by the reciprocal. Use the guides to help you. You do **not** need to simplify your answers.

1  $\frac{3}{4} \div \frac{2}{5}$

$$\frac{3}{4} \times \frac{5}{2} = \frac{15}{8}$$

2  $\frac{5}{4} \div \frac{2}{3}$

$$\frac{5}{4} \times \text{---} =$$

3  $\frac{1}{7} \div \frac{1}{4}$

$$\frac{1}{7} \times \text{---} =$$

4  $\frac{8}{13} \div \frac{1}{2}$

$$\frac{8}{13} \times \text{---} =$$

5  $\frac{3}{5} \div \frac{1}{6}$

$$\frac{3}{5} \times \text{---} =$$

6  $\frac{4}{8} \div \frac{5}{1}$

$$\frac{4}{8} \times \text{---} =$$

7  $\frac{5}{8} \div \frac{3}{4}$

$$\frac{5}{8} \times \text{---} =$$

8  $\frac{1}{12} \div \frac{1}{12}$

$$\frac{1}{12} \times \text{---} =$$

9  $\frac{7}{9} \div \frac{2}{3}$

$$\frac{7}{9} \times \text{---} =$$

10  $\frac{1}{8} \div \frac{3}{16}$

$$\frac{1}{8} \times \text{---} =$$

11  $\frac{5}{11} \div \frac{4}{7}$

$$\frac{5}{11} \times \text{---} =$$

12  $\frac{9}{10} \div \frac{5}{6}$

$$\frac{9}{10} \times \text{---} =$$



## Dividing Fractions (More Practice)

F-DIV 3

**Instructions:** Solve these division problems by multiplying by the reciprocal. You do **not** need to simplify your answers.

1  $\frac{1}{6} \div \frac{3}{7}$

$$\frac{1}{6} \times \frac{7}{3} = \frac{7}{18}$$

2  $\frac{5}{6} \div \frac{3}{4}$

3  $\frac{5}{12} \div \frac{1}{4}$

4  $\frac{4}{11} \div \frac{5}{7}$

5  $\frac{4}{7} \div \frac{2}{3}$

6  $\frac{9}{2} \div \frac{5}{1}$

7  $\frac{6}{5} \div \frac{5}{3}$

8  $\frac{2}{7} \div \frac{7}{9}$

9  $\frac{1}{16} \div \frac{1}{6}$

10  $\frac{11}{12} \div \frac{2}{3}$

11  $\frac{3}{10} \div \frac{7}{8}$

12  $\frac{10}{8} \div \frac{8}{9}$

## Dividing a Fraction by a Whole Number (and Vice-Versa)

F-DIV 4

**Instructions:** Solve these division problems. You do **not** need to simplify your answers in this exercise set.

1  $\frac{3}{5} \div 2 = \frac{3}{5} \div \frac{2}{1}$

2  $5 \div \frac{3}{8} =$

$$\frac{3}{5} \times \frac{1}{2} = \frac{3}{10}$$

3  $\frac{1}{4} \div 3 =$

4  $10 \div \frac{9}{2} =$

5  $\frac{6}{7} \div 5 =$

6  $\frac{1}{4} \div 4 =$

7  $9 \div \frac{4}{7} =$

8  $8 \div \frac{3}{4} =$

9  $\frac{5}{12} \div 2 =$

10  $4 \div \frac{1}{10} =$



## Fractions Made From Fractions

F-DIV 5

**Instructions:** Solve these fraction division problems. Some have guides to help you. You do **not** need to simplify your answers.

1  $\frac{1}{\frac{2}{5}} = \frac{1}{2} \times \frac{7}{5} = \frac{7}{10}$

reciprocal

2  $\frac{\frac{2}{5}}{\frac{6}{7}} =$

3  $\frac{\frac{4}{7}}{\frac{1}{3}} = \frac{4}{7} \times \frac{3}{1} =$

4  $\frac{\frac{1}{4}}{\frac{1}{4}} =$

5  $\frac{\frac{3}{8}}{\frac{5}{2}} = \frac{3}{8} \times \frac{2}{5} =$

6  $\frac{\frac{4}{10}}{\frac{3}{7}} =$

7  $\frac{\frac{5}{9}}{\frac{6}{9}} = \frac{5}{9} \times \frac{9}{6} =$

8  $\frac{\frac{2}{9}}{\frac{4}{6}} =$

9  $\frac{\frac{1}{5}}{\frac{2}{11}} = \frac{1}{5} \times \frac{11}{2} =$

10  $\frac{\frac{9}{12}}{\frac{2}{3}} =$

11  $\frac{\frac{7}{12}}{\frac{4}{5}} = \frac{7}{12} \times \frac{5}{4} =$

12  $\frac{\frac{6}{7}}{\frac{8}{9}} =$

## Mixed Numbers

- 1** Re-write this mixed number as a sum of 'whole fractions' and a proper fraction. Then add those fractions up.

$$2\frac{1}{4}$$

- 2** Re-write this mixed number as a sum of 'whole fractions' and a proper fraction. Then add those fractions up.

$$3\frac{2}{5}$$

- 3** Redo problem 2 using multiplication instead of repeated addition like you saw in the video. (Show your work.)

$$3\frac{2}{5}$$

- 4** Use the method you used in problem 3 to convert this mixed number into an improper fraction.

$$8\frac{1}{3}$$

- 5** Subtract a 'whole fraction' from this improper fraction. Is the leftover fraction proper or improper?

$$\frac{9}{4}$$

- 6** How many 'whole fractions' could be subtracted from this improper fraction? (Hint: use division)

$$\frac{20}{3}$$

- 7** Convert this improper fraction into a mixed number using division.

$$\frac{10}{7}$$

- 8** Convert this improper fraction into a mixed number using division.

$$\frac{9}{4}$$

- 9** Convert this improper fraction into a mixed number using division.

$$\frac{15}{4}$$

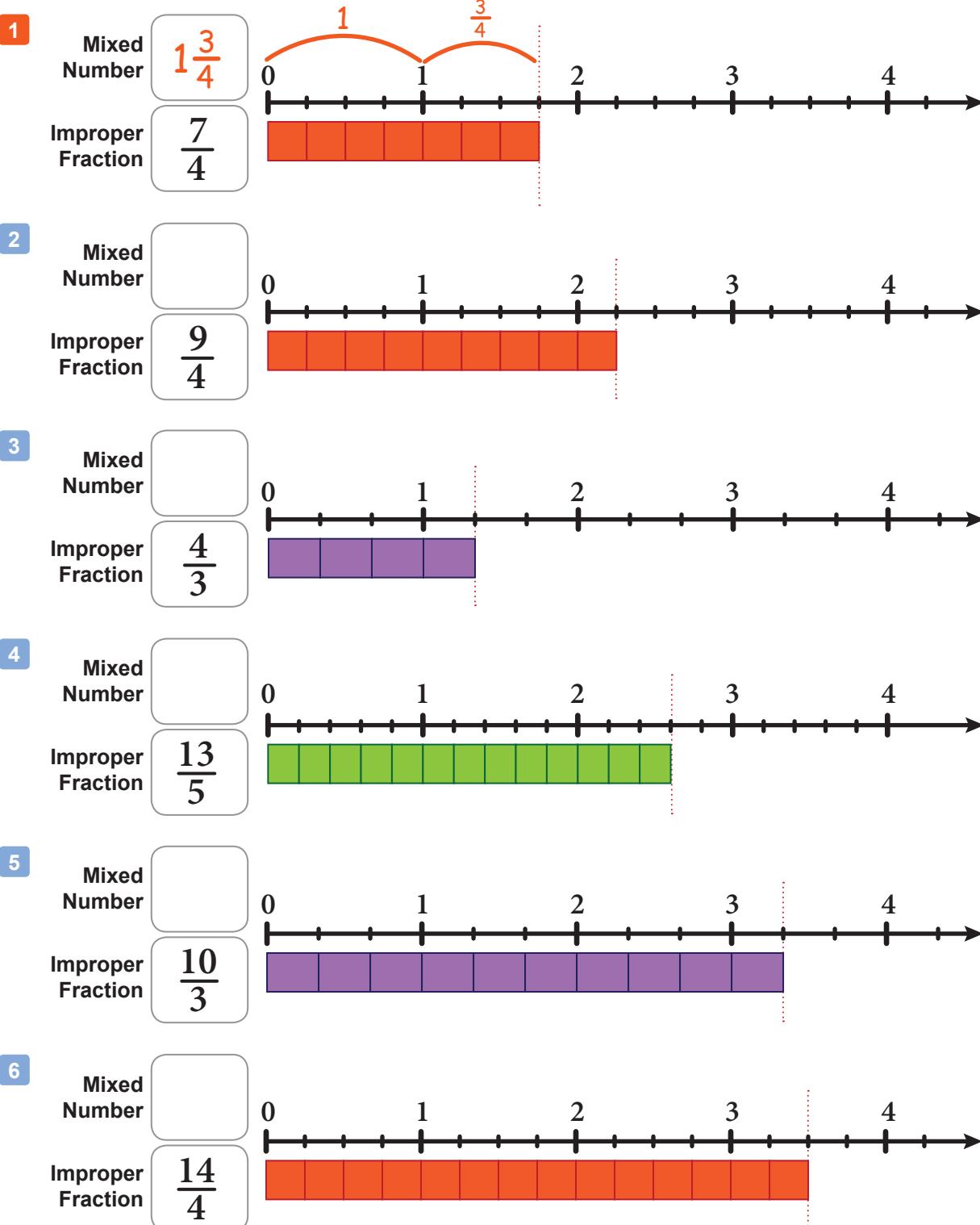
- 10** Convert this improper fraction into a mixed number using division.

$$\frac{28}{5}$$

## Mixed Numbers & Improper Fractions

F-MN 1

**Instructions:** In each problem below, an improper fraction is represented by blocks beneath a number line. Use the number line to determine what the equivalent mixed number form would be. (Notice that some number lines have different sub-divisions: thirds, fourths, fifths...)



## Converting Mixed Numbers - The Long Way

F-MN 2

**Instructions:** Re-write each mixed number as a sum of 'whole fractions' and a proper fraction. Then add those fractions up to get the improper fraction form of the mixed number.

$$\begin{aligned} \text{1 } 1\frac{3}{8} &= 1 + \frac{3}{8} \\ &= \frac{8}{8} + \frac{3}{8} = \left(\frac{11}{8}\right) \end{aligned}$$

$$\begin{aligned} \text{2 } 3\frac{1}{5} &= 1 + 1 + 1 + \frac{1}{5} \\ &= \frac{5}{5} + \frac{5}{5} + \frac{5}{5} + \frac{1}{5} = \left(\frac{16}{5}\right) \end{aligned}$$

3  $2\frac{3}{4}$

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

5  $1\frac{7}{10}$

6  $3\frac{1}{3}$

7  $2\frac{6}{7}$

8  $2\frac{3}{25}$

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

10  $1\frac{5}{12}$



## Converting Mixed Numbers by Multiplying

F-MN 3

**Instructions:** Convert each mixed number into an improper fraction using multiplication like you saw in the video. (Since multiplication is repeated addition, it's much quicker to multiply the whole number part of the mixed number by a 'whole fraction' and then add the product you get to the fraction part of the mixed number.)

$$\begin{aligned} \text{1 } 2\frac{3}{4} &= 2 \times \frac{4}{4} + \frac{3}{4} \\ &= \frac{8}{4} + \frac{3}{4} = \left(\frac{11}{4}\right) \end{aligned}$$

$$\begin{aligned} \text{2 } 5\frac{1}{3} &= 5 \times \frac{3}{3} + \frac{1}{3} \\ &= \frac{15}{3} + \frac{1}{3} = \left(\frac{16}{3}\right) \end{aligned}$$

3     $5\frac{1}{6}$

4     $4\frac{3}{8}$

5     $10\frac{3}{4}$

6     $9\frac{1}{9}$

7     $2\frac{4}{15}$

8     $11\frac{3}{7}$

9     $1\frac{7}{12}$

10     $25\frac{1}{4}$



## Converting Improper Fractions by Dividing

F-MN 4

**Instructions:** You can convert an improper fraction into a mixed number just by dividing the top number (numerator) by the bottom number (denominator). The answer to the division is the whole number part of the mixed number and the remainder of the division tells you what fraction is left over.

1  $\frac{14}{5} = \underline{2\frac{4}{5}}$

divide top  
by bottom

2  $\frac{23}{7} = \underline{3\frac{2}{7}}$

3  $\frac{19}{5}$

4  $\frac{11}{4}$

5  $\frac{31}{7}$

6  $\frac{42}{8}$

7  $\frac{50}{9}$

8  $\frac{22}{7}$

9  $\frac{17}{3}$

10  $\frac{84}{9}$



## Converting Mixed Numbers and Improper Fractions - Set 1

F-MN 5

**Instructions:** Use the procedures you've learned to convert each mixed number into an improper fraction, and each improper fraction into a mixed number.

$$\begin{aligned} \textcircled{1} \quad 4\frac{1}{6} &= 4 \times \frac{6}{6} + \frac{1}{6} \\ &= \frac{24}{6} + \frac{1}{6} = \left( \frac{25}{6} \right) \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad \frac{36}{5} &= \left( 7\frac{1}{5} \right) \\ 5) \overline{36} &\phantom{36} \\ &- 35 \\ &\phantom{-}1 \end{aligned}$$

\textcircled{3}  $3\frac{5}{8}$

\textcircled{4}  $\frac{20}{3}$

\textcircled{5}  $7\frac{1}{2}$

\textcircled{6}  $\frac{23}{10}$

\textcircled{7}  $9\frac{2}{3}$

\textcircled{8}  $\frac{29}{6}$

\textcircled{9}  $5\frac{1}{12}$

\textcircled{10}  $\frac{34}{8}$



**Converting Mixed Numbers and Improper Fractions - Set 2**

F-MN 6

**Instructions:** Use the procedures you've learned to convert each mixed number into an improper fraction, and each improper fraction into a mixed number.

1  $5\frac{1}{4}$

2  $\frac{13}{5}$

3  $2\frac{4}{15}$

4  $\frac{75}{7}$

5  $8\frac{1}{8}$

6  $\frac{16}{5}$

7  $12\frac{2}{3}$

8  $\frac{30}{4}$

9  $6\frac{2}{5}$

10  $\frac{100}{11}$



## Adding Mixed Numbers

**1**  $4 + 3\frac{1}{5}$

**2**  $1\frac{3}{8} + 11$

**3**  $1\frac{1}{5} + \frac{3}{5}$

**4**  $\frac{1}{4} + 4\frac{3}{4}$

**5**  $6\frac{1}{8} + 3\frac{3}{8}$

**6**  $4\frac{5}{8} + 1\frac{4}{8}$

**7**  $2\frac{1}{3} + 3\frac{5}{6}$

**8** 
$$\begin{array}{r} 4\frac{2}{3} \\ + 5\frac{2}{5} \\ \hline \end{array}$$

## Adding Mixed Numbers to Whole Numbers or Fractions

F-AMN 1

**Instructions:** Add these mixed numbers, whole numbers and fractions.

$$\begin{aligned} 1 \quad & 3\frac{2}{9} + 5 \\ & = 5 + 3 + \frac{2}{9} \\ & = \underline{\underline{8\frac{2}{9}}} \end{aligned}$$

$$\begin{aligned} 2 \quad & \frac{1}{7} + 6\frac{5}{7} \\ & = 6 + \frac{1}{7} + \frac{5}{7} \\ & = \underline{\underline{6\frac{6}{7}}} \end{aligned}$$

$$3 \quad \frac{1}{3} + 5\frac{1}{3}$$

$$4 \quad 4 + 6\frac{1}{9}$$

$$5 \quad 1\frac{1}{8} + 1$$

$$6 \quad 2\frac{4}{10} + \frac{3}{10}$$

$$7 \quad 20 + 3\frac{5}{6}$$

$$8 \quad 7\frac{5}{12} + 7$$

$$9 \quad \frac{1}{7} + 4 + 1\frac{2}{7}$$

$$10 \quad 7 + 3\frac{1}{5} + 10$$



## Adding Mixed Numbers (with like fractions)

F-AMN 2

**Instructions:** Add these mixed numbers. Regroup and/or simplify your answers if possible.

$$\textcircled{1} \quad 4\frac{1}{5} + 1\frac{3}{5}$$

$$= 4 + 1 + \frac{1}{5} + \frac{3}{5}$$

$$= \textcircled{5}\frac{4}{5}$$

$$\textcircled{2} \quad 2\frac{1}{4} + 5\frac{3}{4}$$

$$= 2 + 5 + \frac{1}{4} + \frac{3}{4}$$

$$= 7\frac{4}{4} = \textcircled{8}$$

$$\textcircled{3} \quad 3\frac{4}{9} + 3\frac{1}{9}$$

$$\textcircled{4} \quad 8\frac{1}{3} + 2\frac{1}{3}$$

$$\textcircled{5} \quad 10\frac{1}{8} + 1\frac{3}{8}$$

$$\textcircled{6} \quad 1\frac{6}{10} + 3\frac{4}{10}$$

$$\textcircled{7} \quad 7\frac{3}{12} + 8\frac{5}{12}$$

$$\textcircled{8} \quad 4\frac{1}{9} + 8\frac{5}{9}$$

$$\textcircled{9} \quad 1\frac{1}{8} + 2\frac{2}{8} + 3\frac{3}{8}$$

$$\textcircled{10} \quad 2\frac{1}{3} + 3\frac{1}{3} + 4\frac{1}{3}$$



## Adding Mixed Numbers (with answers that need regrouping)

F-AMN 3

**Instructions:** Add these mixed numbers. Regroup and/or simplify your answers if possible.

1  $2\frac{4}{5} + 1\frac{3}{5}$

$$= 2 + 1 + \frac{4}{5} + \frac{3}{5}$$

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

$$= 3 + 1 + \frac{2}{5} = 4\frac{2}{5}$$

2  $5\frac{4}{7} + 3\frac{4}{7}$

3  $3\frac{3}{8} + 2\frac{6}{8}$

4  $9\frac{3}{5} + 5\frac{3}{5}$

5  $5\frac{9}{10} + 5\frac{4}{10}$

6  $7\frac{2}{3} + 1\frac{4}{3}$

7  $1\frac{3}{8} + 5\frac{7}{8}$

8  $2\frac{5}{6} + 1\frac{2}{6}$



## Adding Mixed Numbers (with un-like fractions)

F-AMN 4

**Instructions:** Add these mixed numbers. Regroup and/or simlify your answers if possible.

1       $3\frac{2}{3} + 6\frac{1}{4}$

$$= 3 + 6 + \left(\frac{4}{4}\right)\frac{2}{3} + \frac{1}{4}\left(\frac{3}{3}\right)$$

$$= 9 + \frac{8}{12} + \frac{3}{12} = \textcircled{9}\frac{11}{12}$$

2       $1\frac{2}{3} + 5\frac{1}{5}$

3       $4\frac{1}{2} + 3\frac{1}{8}$

4       $7\frac{3}{4} + 2\frac{1}{3}$

5       $1\frac{2}{3} + 5\frac{1}{2}$

6       $5\frac{1}{6} + 5\frac{1}{2}$

7       $3\frac{3}{10} + 1\frac{1}{2}$

8       $6\frac{7}{9} + 10\frac{2}{3}$



## Adding Mixed Numbers (stacked format)

F-AMN 5

**Instructions:** Add these mixed numbers. In some problems, you may need to convert to like-fractions. Regroup and/or simplify your answers if possible.

$$\begin{array}{r} 7\frac{1}{5} \\ + 2\frac{3}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{1}{2} \\ + 1\frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 8\frac{2}{5} \\ + 2\frac{1}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 3\frac{1}{2} \\ + 4\frac{3}{7} \\ \hline \end{array}$$

$$\begin{array}{r} 12\frac{3}{8} \\ + 3\frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 1\frac{7}{8} \\ + 1\frac{1}{2} \\ \hline \end{array}$$

$$\begin{array}{r} 9\frac{1}{10} \\ + 4\frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 10\frac{1}{3} \\ + 1\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 4\frac{5}{6} \\ + 4\frac{1}{2} \\ \hline \end{array}$$



## Subtracting Mixed Numbers

**1**  $5\frac{7}{9} - 4\frac{5}{9}$

**2**  $7\frac{1}{2} - 4$

**3**  $5 - 3\frac{1}{4}$

**4** 
$$\begin{array}{r} 9\frac{1}{4} \\ - 2\frac{3}{4} \\ \hline \end{array}$$

**5**  $8 - 5\frac{1}{6}$

**6** 
$$\begin{array}{r} 5\frac{1}{3} \\ - 1\frac{2}{3} \\ \hline \end{array}$$

**7** 
$$\begin{array}{r} 10\frac{2}{3} \\ - 3\frac{2}{9} \\ \hline \end{array}$$

**8** 
$$\begin{array}{r} 7\frac{1}{4} \\ - 5\frac{2}{3} \\ \hline \end{array}$$

## Subtracting a Fraction from a Whole Number

F-SMN 1

**Instructions:** In the video lesson, we learned that you can subtract a fraction from a whole number if you “un-simplify” the whole number into the sum of a “whole fraction” and a whole number. Practice doing that with these problems.

1  $7 - \frac{2}{9}$

$$= 6 + 1 - \frac{2}{9}$$

$$= 6 + \frac{9}{9} - \frac{2}{9}$$

$$= 6 + \frac{7}{9} = 6\frac{7}{9}$$

2  $10 - \frac{5}{7}$

3  $5 - \frac{1}{4}$

4  $3 - \frac{3}{10}$

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

6  $12 - \frac{9}{15}$

7  $6 - \frac{2}{5}$

8  $11 - \frac{7}{12}$

9  $2 - \frac{5}{8}$



## Subtracting BOTH parts of a Mixed Number

F-SMN 2

**Instructions:** When subtracting a mixed number, you need to remember that the two parts of the mixed number form a group and you need to subtract both parts. In these problems, use parentheses to help you do that just like you saw in the first example in the video lesson.

1  $10 - \left(1\frac{5}{12}\right)$

$$= 10 - 1 - \frac{5}{12}$$

$$= 9 - \frac{5}{12}$$

$$= 8 + 1 - \frac{5}{12}$$

$$= 8 + \frac{12}{12} - \frac{5}{12}$$

$$= 8 + \frac{7}{12} = 8\frac{7}{12}$$

2  $7 - 4\frac{2}{3}$

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

4  $9 - 8\frac{5}{12}$

5  $11 - 7\frac{1}{6}$

6  $5 - 2\frac{6}{7}$



## Using Stacked Form to Subtract Mixed Numbers

F-SMN 3

**Instructions:** An even better way to remember to subtract both parts of a mixed number is to use "stacked form". Re-write these simple subtraction problems in stacked form to solve them. Be sure to put the number that is being taken away on the bottom.

1  $10\frac{5}{9} - 8\frac{2}{9}$

$$\begin{array}{r} 10\frac{5}{9} \\ - 8\frac{2}{9} \\ \hline 2\frac{3}{9} \text{ or } (2\frac{1}{3}) \end{array}$$

2  $7\frac{7}{8} - 6\frac{2}{8}$

3  $5\frac{2}{3} - 3\frac{1}{3}$

4  $12\frac{3}{5} - 5\frac{1}{5}$

5  $8\frac{9}{12} - 2\frac{5}{12}$

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

7  $25\frac{5}{6} - 10\frac{1}{6}$

8  $6\frac{9}{10} - 4\frac{5}{10}$



## “Borrowing” from the Whole Number Part

F-SMN 4

**Instructions:** When subtracting mixed numbers, sometimes you need to make the fraction part of the mixed number bigger by “borrowing” from the whole number part. This results in a mixed number that has an improper fraction, which is usually “bad form” as an answer, but can be helpful for subtracting. Convert each of these mixed numbers into one that has an “improper” fraction part.

$$\begin{aligned} \text{1} \quad 5\frac{2}{3} &= 4 + 1 + \frac{2}{3} \\ &= 4 + \frac{3}{3} + \frac{2}{3} \\ &= 4 + \frac{5}{3} = \left(4\frac{5}{3}\right) \end{aligned}$$

$$\begin{aligned} \text{3} \quad 8\frac{2}{5} & \\ \text{4} \quad 4\frac{1}{3} & \end{aligned}$$

$$\begin{aligned} \text{5} \quad 15\frac{3}{8} & \\ \text{6} \quad 7\frac{3}{10} & \end{aligned}$$

$$\begin{aligned} \text{7} \quad 9\frac{1}{12} & \\ \text{8} \quad 12\frac{3}{4} & \end{aligned}$$



## Subtracting Mixed Numbers (with 'like' fractions) - Set 1

F-SMN 5

**Instructions:** Subtract these mixed numbers. If the top fraction is less than the bottom, you'll need to borrow from the whole number part.

1      
$$\begin{array}{r} 8\frac{1}{5} \\ - 2\frac{4}{5} \\ \hline \end{array}$$

$7 + \frac{5}{5} + \frac{1}{5}$   
 $- 2\frac{4}{5}$   
 $\hline$   
 $(5\frac{2}{5})$

$7\frac{6}{5}$

2      
$$\begin{array}{r} 4\frac{3}{8} \\ - 1\frac{7}{8} \\ \hline \end{array}$$

3      
$$\begin{array}{r} 7\frac{1}{10} \\ - 5\frac{7}{10} \\ \hline \end{array}$$

4      
$$\begin{array}{r} 9\frac{4}{5} \\ - 6\frac{3}{5} \\ \hline \end{array}$$

5      
$$\begin{array}{r} 10\frac{3}{7} \\ - 4\frac{4}{7} \\ \hline \end{array}$$

6      
$$\begin{array}{r} 8\frac{3}{12} \\ - 3\frac{7}{12} \\ \hline \end{array}$$



## Subtracting Mixed Numbers (with 'like' fractions) - Set 2

F-SMN 6

**Instructions:** Subtract these mixed numbers. If the top fraction is less than the bottom, you'll need to borrow from the whole number part.

**1**

$$\begin{array}{r} 4\frac{1}{6} \\ - 3\frac{5}{6} \\ \hline \end{array}$$

$3 + \frac{6}{6} + \frac{1}{6}$

$$\begin{array}{r} 3\frac{7}{6} \\ - 3\frac{5}{6} \\ \hline 0\frac{2}{6} \end{array}$$

or  $\frac{1}{3}$

**2**

$$\begin{array}{r} 6\frac{4}{9} \\ - 4\frac{8}{9} \\ \hline \end{array}$$

**3**

$$\begin{array}{r} 20\frac{8}{9} \\ - 8\frac{7}{9} \\ \hline \end{array}$$

**4**

$$\begin{array}{r} 11\frac{2}{5} \\ - 5\frac{4}{5} \\ \hline \end{array}$$

**5**

$$\begin{array}{r} 13\frac{1}{7} \\ - 6\frac{2}{7} \\ \hline \end{array}$$

**6**

$$\begin{array}{r} 8\frac{1}{3} \\ - 7\frac{2}{3} \\ \hline \end{array}$$



## Subtracting Mixed Numbers (with 'un-like' fractions) - Set 1

F-SMN 7

**Instructions:** Subtract these mixed numbers. Start by changing the un-like fractions into 'like' fractions. Then, if the top fraction is less than the bottom fraction, you'll need to borrow from the whole number part in order to subtract.

$$\begin{array}{r}
 \text{1} \quad 10\frac{1}{2} \left( \frac{3}{3} \right) \quad 10\frac{3}{6} \quad 9 + \frac{6}{6} + \frac{3}{6} \quad 9\frac{9}{6} \\
 - 7\frac{5}{6} \quad - 7\frac{5}{6} \quad - 7\frac{5}{6} \quad - 7\frac{5}{6} \\
 \hline
 \end{array}$$

$2\frac{4}{6}$  or  $(2\frac{2}{3})$

$$\begin{array}{r}
 \text{2} \quad 9\frac{1}{4} \\
 - 3\frac{1}{3} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \text{3} \quad 8\frac{1}{3} \\
 - 5\frac{1}{7} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \text{4} \quad 12\frac{5}{14} \\
 - 6\frac{5}{7} \\
 \hline
 \end{array}$$



## Subtracting Mixed Numbers (with 'un-like' fractions) - Set 2

F-SMN 8

**Instructions:** Subtract these mixed numbers. Start by changing the un-like fractions into 'like' fractions. Then, if the top fraction is less than the bottom fraction, you'll need to borrow from the whole number part in order to subtract.

$$\begin{array}{r} 1 \quad 8\frac{5}{6} \\ - 7\frac{3}{4} \\ \hline \end{array}$$

$$\begin{array}{r} 2 \quad 15\frac{2}{9} \\ - 8\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 3 \quad 11\frac{5}{6} \\ - 4\frac{7}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 4 \quad 9\frac{1}{4} \\ - 7\frac{3}{10} \\ \hline \end{array}$$

