Fractions and Decimals

Test Review Packet

One way to convert a decimal to a fraction or mixed number is to read the number.

Look at the decimal 5.75. The right-hand digit is in the hundredths place. Read 5.75 as "five and seventy-five hundredths."

whole number → $5\frac{75}{100}$ ← fraction

As a mixed number, the whole number is 5. The numerator is 75. The denominator is 100.

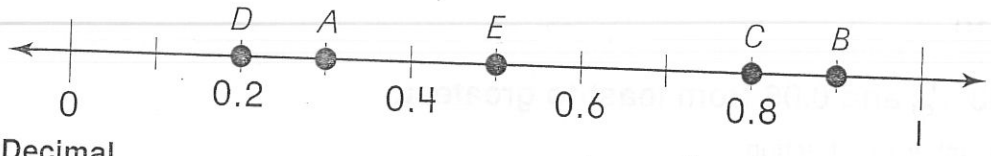
Write the fraction in simplest form using the greatest common factor.

75: 1, 3, (5), 15, (25), 75
100: 1, 2, 4, (5), 10, 20, (25), 50, 100
GCF = 25

$$5\frac{75}{100} = 5\frac{75 \div 25}{100 \div 25} = 5\frac{3}{4}$$

So, $5.75 = 5\frac{3}{4}$ in simplest form.

Identify the decimal and the fraction in simplest form for point *E*.



Decimal
Between 0 and 1 there are 10 spaces. So, each space represents 0.1. Point *E* is one space to the right of 0.4. Point *E* is the next tenth, or 0.5.

So, Point *E* is at $0.5 = \frac{1}{2}$.

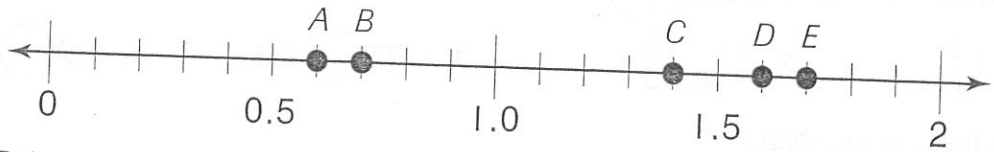
Fraction
Read 0.5 as "five-tenths." Write $\frac{5}{10}$. Simplify by dividing the numerator and denominator by the GCF, 5.

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

Write as a fraction or mixed number in simplest form.

1. 0.48 _____ **2.** 0.8 _____ **3.** 0.004 _____ **4.** 3.6 _____ **5.** 4.82 _____

Identify a decimal and a fraction or mixed number in simplest form for each point.



6. Point *A* _____ **7.** Point *B* _____ **8.** Point *C* _____ **9.** Point *D* _____ **10.** Point *E* _____

Name _____

Compare and Order Fractions and Decimals

You can compare fractions and decimals by rewriting them so all are fractions or decimals.

Use < or > to compare 0.77 and $\frac{7}{10}$.

Method 1

Write the fraction as a decimal.
Then compare the decimals.

$\frac{7}{10} = 10\overline{)7.0} = 0.7$
$-\ \frac{7.0}{0}$

$0.77 > 0.7$

So, $0.77 > \frac{7}{10}$.

Method 2

Write the decimal as a fraction.
Rewrite $\frac{7}{10}$ with a denominator of 100.
Then compare the fractions.

$0.77 = \frac{77}{100}$ $\quad \frac{7}{10} = \frac{7 \times 10}{10 \times 10} = \frac{70}{100}$

$77 > 70$

So, $\frac{77}{100} > \frac{70}{100}$ and $0.77 > \frac{7}{10}$.

Order 0.08, $\frac{1}{20}$, and 0.06 from least to greatest.

Write each number as a fraction.

$0.08 = \frac{8}{100}$ $\quad \frac{1}{20} = \frac{1}{20}$ $\quad 0.06 = \frac{6}{100}$

Compare the fractions.

Compare the fractions with the same denominator.

$8 > 6$

So, $\frac{8}{100} > \frac{6}{100}$.

Compare the fractions with different denominators using common denominators.

$\frac{1}{20} = \frac{1 \times 5}{20 \times 5} = \frac{5}{100}$, $5 < 6$, so $\frac{1}{20} < \frac{6}{100}$.

So, $\frac{1}{20} < \frac{6}{100} < \frac{8}{100}$.

So, the numbers from least to greatest are $\frac{1}{20}$, 0.06, and 0.08.

Compare. Write <, >, or = in each ◯.

1. $\frac{4}{11}$ ◯ $\frac{2}{11}$
2. $\frac{5}{7}$ ◯ $\frac{5}{6}$
3. 0.27 ◯ 0.3
4. 0.9 ◯ $\frac{4}{25}$

Order from least to greatest.

5. $\frac{3}{8}, \frac{5}{16}, \frac{1}{4}$
6. 0.7, 0.82, $\frac{4}{5}$
7. $2\frac{1}{6}, 1\frac{5}{12}, 2\frac{1}{4}$
8. 0.64, 0.6, $\frac{5}{8}$, 0.59

_____ _____ _____ _____

Name _____

Multiply Fractions

To multiply fractions, you can multiply numerators and multiply denominators. Write the product in simplest form.

Find $\frac{3}{10} \times \frac{4}{5}$.

Step 1 Multiply numerators. Multiply denominators.

$$\frac{3}{10} \times \frac{4}{5} = \frac{3 \times 4}{10 \times 5} = \frac{12}{50}$$

Step 2 Write the product in simplest form.

$$\frac{12}{50} = \frac{12 \div 2}{50 \div 2} = \frac{6}{25}$$

So, $\frac{3}{10} \times \frac{4}{5} = \frac{6}{25}$.

To simplify an expression with fractions, follow the order of operations as you would with whole numbers.

Find $\left(\frac{5}{7} - \frac{3}{14}\right) \times \frac{1}{10}$.

Step 1 Perform the operation in parentheses. To subtract, write an equivalent fraction using a common denominator.

Multiply the numerator and denominator of $\frac{5}{7}$ by 2 to get a common denominator of 14.

$$\left(\frac{5}{7} - \frac{3}{14}\right) \times \frac{1}{10} = \left(\frac{5 \times 2}{7 \times 2} - \frac{3}{14}\right) \times \frac{1}{10}$$

$$= \left(\frac{10}{14} - \frac{3}{14}\right) \times \frac{1}{10}$$

Step 2 Multiply numerators. Multiply denominators.

$$= \frac{7}{14} \times \frac{1}{10}$$

$$= \frac{7 \times 1}{14 \times 10} = \frac{7}{140}$$

Step 3 Write the product in simplest form. Divide the numerator and the denominator by the GCF.

$$= \frac{7 \div 7}{140 \div 7} = \frac{1}{20}$$

So, $\left(\frac{5}{7} - \frac{3}{14}\right) \times \frac{1}{10} = \frac{1}{20}$.

Find the product. Write the product in simplest form.

1. $\frac{3}{4} \times \frac{1}{5}$ _____

2. $\frac{4}{7} \times \frac{5}{12}$ _____

3. $\frac{3}{8} \times \frac{2}{9}$ _____

4. $\frac{4}{5} \times \frac{5}{8}$ _____

Evaluate using the order of operations.

5. $\frac{7}{8} - \frac{5}{6} \times \frac{1}{2}$ _____

6. $\left(\frac{4}{5} + \frac{1}{3}\right) \times \frac{5}{9}$ _____

7. $\frac{3}{4} \times \frac{2}{5} + \frac{1}{4}$ _____

8. $\frac{3}{10} \times \left(\frac{2}{3} - \frac{1}{6}\right)$ _____

Name _____

Simplify Factors

Sometimes you can simplify before you multiply fractions.

Find the product of $\frac{5}{6} \times \frac{4}{15}$. Simplify before multiplying.

Step 1 Rewrite as a single fraction.

$$\frac{5 \times 4}{6 \times 15}$$

Step 2 Look for numbers in the numerator that have common factors with numbers in the denominator. Find the GCF.

$$\frac{⑤ \times \boxed{4}}{\boxed{6} \times ⑮}$$

The GCF of 5 and 15 is 5.
The GCF of 6 and 4 is 2.

Step 3 Divide.

$5 \div 5 = 1$ $\quad$ $6 \div 2 = 3$
$15 \div 5 = 3$ $\quad$ $4 \div 2 = 2$

$$\frac{\overset{1}{\cancel{5}} \times \overset{2}{\cancel{4}}}{\underset{3}{\cancel{6}} \times \underset{3}{\cancel{15}}}$$

Step 4 Rewrite the fraction with the new numbers. Multiply the numerators. Multiply the denominators.

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

So, $\frac{5}{6} \times \frac{4}{15} = \frac{2}{9}$.

Find the product. Simplify before multiplying.

1. $\frac{4}{9} \times \frac{3}{14}$ _____

2. $\frac{3}{4} \times \frac{2}{5}$ _____

3. $\frac{3}{20} \times \frac{5}{6}$ _____

4. $\frac{7}{10} \times \frac{4}{5}$ _____

5. $\frac{3}{16} \times \frac{8}{27}$ _____

6. $\frac{1}{8} \times \frac{2}{7}$ _____

Name _____

Divide Fractions

Keep Change Flip

You can multiply by reciprocals to divide fractions.

Write the reciprocal of $\frac{1}{7}$.

To find the reciprocal of a number, switch the numerator and the denominator.

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

Since $\frac{1}{7} \times \frac{7}{1} = 1$, the reciprocal of $\frac{1}{7}$ is $\frac{7}{1}$.

Find the quotient of $\frac{4}{5} \div \frac{1}{4}$. Write it in simplest form.

Step 1 Find the reciprocal of the second fraction.

Think: $\frac{1}{4} \times \frac{4}{1} = 1$.

The reciprocal of $\frac{1}{4}$ is $\frac{4}{1}$.

Step 2 Write a multiplication problem using the reciprocal of the second fraction.

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

Step 3 Multiply.

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

Step 4 Simplify.

$\frac{16}{5} = 3\frac{1}{5}$

So, $\frac{4}{5} \div \frac{1}{4} = 3\frac{1}{5}$.

Find the quotient. Write it in simplest form.

KCF

1. $\frac{5}{6} \div \frac{2}{3}$

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

2. $\frac{3}{8} \div \frac{1}{6}$

3. $\frac{2}{3} \div \frac{1}{2}$

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

_____ _____ _____ _____

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

6. $\frac{5}{8} \div \frac{1}{2}$

7. $\frac{7}{10} \div \frac{2}{5}$

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

_____ _____ _____ _____

Name _____

Divide Mixed Numbers

To divide mixed numbers, first rewrite the mixed numbers as fractions greater than 1. Then multiply the dividend by the reciprocal of the divisor.

Find the quotient of $7\frac{1}{2} \div 2\frac{1}{2}$. Write it in simplest form.

Step 1 Write the mixed numbers as fractions. $7\frac{1}{2} \div 2\frac{1}{2} = \frac{15}{2} \div \frac{5}{2}$

Step 2 Use the reciprocal of the divisor to write a multiplication problem. $= \frac{15}{2} \times \frac{2}{5}$

Step 3 Simplify. Look for common factors in the numerators and denominators. Divide out the common factors. $= \frac{\overset{3}{\cancel{15}}}{\underset{1}{\cancel{2}}} \times \frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{5}}}$

Step 4 Multiply and simplify the product. $= \frac{3}{1} = 3$

So, $7\frac{1}{2} \div 2\frac{1}{2} = 3$.

Find the quotient. Write it in simplest form.

1. $\frac{3}{4} \div 1\frac{1}{2}$ _____

2. $4\frac{1}{2} \div 1\frac{3}{4}$ _____

3. $8 \div 2\frac{3}{4}$ _____

4. $5\frac{5}{8} \div 1\frac{1}{2}$ _____

5. $2\frac{5}{8} \div \frac{5}{6}$ _____

6. $\frac{4}{7} \div 1\frac{2}{3}$ _____

7. $4\frac{7}{10} \div \frac{4}{5}$ _____

8. $4\frac{2}{5} \div \frac{8}{15}$ _____

9. $24 \div 2\frac{2}{3}$ _____

10. $8\frac{3}{4} \div 2\frac{1}{3}$ _____

11. $3\frac{7}{8} \div 4$ _____

12. $2\frac{5}{8} \div 3\frac{1}{2}$ _____