

PICSCIENCE

THE ULTIMATE GUIDE TO FRACTIONS

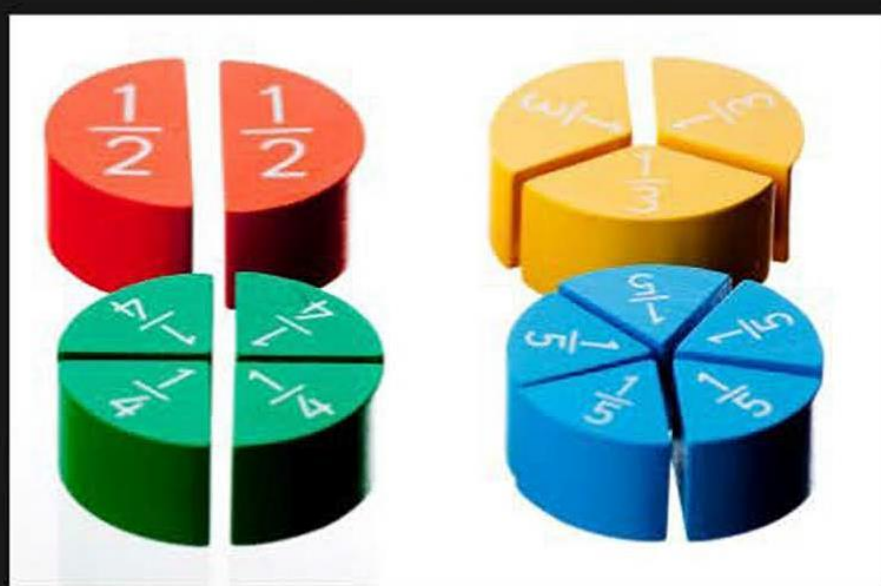


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How to Make the Most of This Workbook

This little workbook is a great way to help you practice and learn fractions. A unique aspect of the design is that it will help you identify any areas that may be causing trouble with fractions.

First, you will go through the tutorials to refresh yourself and review fractions. These tutorials will help you reinforce the basic concepts so you will be ready to move forward with your practice.

We will want to make sure that you can solve basic division problems before we continue to give you more practice on fractions. Why? Because you need to be able to easily complete division operations. And to successfully divide, you need to know how to multiply.

Name: _____ Date: _____

Multiplication Worksheet

1. $3 \times 6 =$

2. $3 \times 9 =$

3. $6 \times 6 =$

4. $5 \times 4 =$

5. $2 \times 10 =$

6. $6 \times 10 =$

7. $1 \times 6 =$

8. $2 \times 6 =$

9. $8 \times 2 =$

10. $2 \times 9 =$

Name: _____ Date: _____

Answer Key

1 . 18

2 . 27

3 . 36

4 . 20

5 . 20

6 . 60

7 . 6

8 . 12

9 . 16

10 . 18

Name: _____ Date: _____

Multiplication Worksheet

1. $15 \times 5 =$

2. $13 \times 6 =$

3. $6 \times 4 =$

4. $7 \times 10 =$

5. $7 \times 7 =$

6. $3 \times 10 =$

7. $19 \times 7 =$

8. $11 \times 2 =$

9. $22 \times 10 =$

10. $17 \times 6 =$

Name: _____ Date: _____

Answer Key

- 1 . 75
- 2 . 78
- 3 . 24
- 4 . 70
- 5 . 49
- 6 . 30
- 7 . 133
- 8 . 22
- 9 . 220
- 10 . 102

Name: _____ Date: _____

Multiplication Worksheet

1. $56 \times 8 =$

2. $47 \times 9 =$

3. $12 \times 5 =$

4. $6 \times 5 =$

5. $16 \times 7 =$

6. $25 \times 3 =$

7. $2 \times 5 =$

8. $76 \times 6 =$

9. $53 \times 10 =$

10. $3 \times 10 =$

Name: _____ Date: _____

Answer Key

1 . 448

2 . 423

3 . 60

4 . 30

5 . 112

6 . 75

7 . 10

8 . 456

9 . 530

10 . 30

Name: _____ Date: _____

Multiplication Worksheet

1. $2 \times 3 =$

2. $27 \times 8 =$

3. $16 \times 5 =$

4. $29 \times 9 =$

5. $10 \times 3 =$

6. $46 \times 3 =$

7. $45 \times 8 =$

8. $10 \times 7 =$

9. $20 \times 6 =$

10. $44 \times 7 =$

Name: _____ Date: _____

Answer Key

1. 6
2. 216
3. 80
4. 261
5. 30
6. 138
7. 360
8. 70
9. 120
10. 308

Name: _____ Date: _____

Division Worksheet

1. $1 \div 1 =$

2. $8 \div 4 =$

3. $3 \div 1 =$

4. $5 \div 1 =$

5. $9 \div 1 =$

6. $4 \div 1 =$

7. $3 \div 3 =$

8. $10 \div 10 =$

9. $9 \div 9 =$

10. $2 \div 2 =$

Name: _____ Date: _____

Answer Key

1 . 1

2 . 2

3 . 3

4 . 5

5 . 9

6 . 4

7 . 1

8 . 1

9 . 1

10 . 1

Name: _____ Date: _____

Division Worksheet

1. $13 \div 1 =$

2. $7 \div 1 =$

3. $10 \div 5 =$

4. $18 \div 3 =$

5. $8 \div 4 =$

6. $8 \div 1 =$

7. $22 \div 1 =$

8. $16 \div 4 =$

9. $25 \div 5 =$

10. $4 \div 4 =$

Name: _____ Date: _____

Answer Key

1 . 13

2 . 7

3 . 2

4 . 6

5 . 2

6 . 8

7 . 22

8 . 4

9 . 5

10 . 1

Name: _____ Date: _____

Division Worksheet

1. $15 \div 3 =$

2. $10 \div 1 =$

3. $12 \div 4 =$

4. $15 \div 5 =$

5. $9 \div 3 =$

6. $24 \div 2 =$

7. $6 \div 3 =$

8. $20 \div 2 =$

9. $6 \div 1 =$

10. $14 \div 1 =$

Name: _____ Date: _____

Answer Key

1. 5
2. 10
3. 3
4. 3
5. 3
6. 12
7. 2
8. 10
9. 6
10. 14

Name: _____ Date: _____

Division Worksheet

1. $6 \div 3 =$

2. $65 \div 1 =$

3. $45 \div 9 =$

4. $12 \div 3 =$

5. $42 \div 7 =$

6. $4 \div 4 =$

7. $100 \div 5 =$

8. $15 \div 3 =$

9. $28 \div 2 =$

10. $32 \div 2 =$

Name: _____ Date: _____

Answer Key

- 1. 2**
- 2. 65**
- 3. 5**
- 4. 4**
- 5. 6**
- 6. 1**
- 7. 20**
- 8. 5**
- 9. 14**
- 10. 16**

HOW TO SIMPLIFY FRACTIONS

Tutorial

Simplifying fractions means rewriting the top and bottom numbers to the smallest possible number we can get them, without changing the value of the fraction.



Example 1:

$$\frac{6}{8} = \frac{\cancel{2}}{\cancel{2}} \times \frac{3}{4} = \frac{3}{4}$$

Let us start with $\frac{6}{8}$

Step 1: Simplifying the Numerator

If we work with the 6 first, we want to use factors of 6, which are 2 and 3.

Step 2: Simplifying the Denominator

Next, we want to use factors of 8, which are 2 and 4.

2 is the common factor in the top and bottom, so it cancels out.

We are left with 3 on the top and 4 on the bottom. The simplest form of

$$\frac{6}{8} \text{ is } \frac{3}{4}$$

HOW TO SIMPLIFY FRACTIONS

Tutorial

Example 2:

$$\frac{\underline{4}}{10} = \frac{\cancel{2} \times 2}{\cancel{2} \times 2} = \frac{\underline{2}}{5}$$

Step 1: Simplifying the Numerator

First, let us work with the top number 4. We want to use a factor of 4, which is 2. In this case, we use 2×2 which is 4.

Step 2: Simplifying the Denominator

Next, we work with 10. We want to use factors of 10, which are 2 and 5. 2 is the common factor so it cancels out.

We are left with 2 on the top and 5 on the bottom. So, the simplest form of

$$\frac{4}{10} \text{ is } \frac{2}{5} .$$

HOW TO SIMPLIFY FRACTIONS

Tutorial

Example 3:

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

Step 1: Simplifying the Numerator

First, let us work with the top number **2**. We want to use the factors of **2**, which are **1** and **2**.

Step 2: Simplifying the Denominator

Next, we work with **4**, the bottom number. We want to use a factor of **4**, which is **2**.

2 is the common factor so it cancels out.

We are left with **1** as the top number and **2** as the bottom number.

So, the simplest form of $\frac{2}{4} = \frac{1}{2}$.

Simplifying Fractions 1

1. $\frac{6}{12} =$

2. $\frac{2}{6} =$

3. $\frac{6}{8} =$

4. $\frac{3}{12} =$

5. $\frac{2}{8} =$

6. $\frac{6}{18} =$

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

8. $\frac{5}{20} =$

9. $\frac{6}{24} =$

10. $\frac{7}{21} =$

Simplifying Fractions 1 Solutions

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

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

3. $\frac{3}{4}$

4. $\frac{1}{4}$

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

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

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

8. $\frac{1}{4}$

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

10. $\frac{1}{3}$

Division Practice 1

1. $10 \div 2 =$

2. $15 \div 3 =$

3. $14 \div 2 =$

4. $21 \div 7 =$

5. $18 \div 2 =$

6. $12 \div 3 =$

7. $4 \div 2 =$

8. $20 \div 4 =$

9. $6 \div 3 =$

10. $27 \div 3 =$

Division Practice 1 Solutions

1. 5

2. 5

3. 7

4. 3

5. 9

6. 4

7. 2

8. 5

9. 2

10. 9

Multiplication Practice

1. $4 \times 3 =$

2. $9 \times 2 =$

3. $5 \times 2 =$

4. $7 \times 3 =$

5. $5 \times 4 =$

6. $9 \times 6 =$

7. $2 \times 2 =$

8. $7 \times 8 =$

9. $6 \times 0 =$

10. $8 \times 6 =$

Multiplication Practice Solutions

1. 12

2. 18

3. 10

4. 21

5. 20

6. 54

7. 4

8. 56

9. 0

10. 48

Division Practice 2

1. $36 \div 9 =$

2. $64 \div 8 =$

3. $56 \div 8 =$

4. $54 \div 6 =$

5. $18 \div 2 =$

6. $15 \div 3 =$

7. $44 \div 4 =$

8. $63 \div 9 =$

9. $72 \div 8 =$

10. $40 \div 5 =$

Division Practice 2 Solutions

1. 4

2. 8

3. 7

4. 9

5. 9

6. 5

7. 11

8. 7

9. 9

10. 8

Simplifying Fractions 2

1. $\frac{4}{44} =$

2. $\frac{5}{20} =$

3. $\frac{6}{24} =$

4. $\frac{33}{55} =$

5. $\frac{16}{32} =$

6. $\frac{5}{30} =$

7. $\frac{3}{9} =$

8. $\frac{9}{18} =$

9. $\frac{3}{27} =$

10. $\frac{4}{36} =$

Simplifying Fractions 2 Solutions

1. $\frac{1}{11}$

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

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

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

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

6. $\frac{1}{6}$

7. $\frac{1}{3}$

8. $\frac{1}{2}$

9. $\frac{1}{9}$

10. $\frac{1}{9}$

How to Find a Common Denominator

Tutorial

In order to add, subtract, or compare two fractions, we need to first find a common denominator.

Example) The fractions $\frac{1}{4}$ and $\frac{1}{6}$ have different denominators.

The fraction $\frac{1}{4}$ has a denominator of 4.

The fraction $\frac{1}{6}$ has a denominator of 6.

The way to find a common denominator is to find a pair of fractions that are equivalent to the fractions $\frac{1}{4}$ and $\frac{1}{6}$.

Here is how we will find a common denominator of $\frac{1}{4}$ and $\frac{1}{6}$:

We want to multiply the numerator and denominator of $\frac{1}{4}$ by a different number to

make a new fraction that is equivalent to $\frac{1}{4}$.

We want to multiply the numerator and denominator of $\frac{1}{6}$ by a different number to

make a new fraction that is equivalent to $\frac{1}{6}$.

We will choose the number for each case such that the two new fractions have the same denominator. $\frac{1}{4}$ and $\frac{1}{6}$

Let us Think: What number is a multiple of both 4 and 6? The number 12 is the smallest multiple of both 4 and 6. We will make a common denominator of 12. Multiply the numerator and denominator by 3 to make an equivalent fraction with a denominator of 12.

$$\frac{1}{4} = \frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$$

How to Find a Common Denominator

(continued)

Multiply the numerator and denominator of $\frac{1}{6}$ by 2 in order to make an equivalent fraction with a denominator of **12**.

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

The fraction $\frac{3}{12}$ is equivalent to the original fraction $\frac{1}{4}$.

The fraction $\frac{2}{12}$ is equivalent to the original fraction $\frac{1}{6}$.

Since $\frac{3}{12}$ and $\frac{2}{12}$ now have the same denominator, we

have successfully found a common denominator, and we can add, subtract, or compare these fractions!

We have also found the lowest common denominator because **12** is the smallest multiple of the original denominators (**4** and **6**).

Least Common Denominator 1

Find the least common denominator.

1. $\frac{3}{5}, \frac{4}{9}, \frac{2}{3}$

2. $\frac{2}{3}, \frac{5}{9}, \frac{7}{12}$

3. $\frac{7}{8}, \frac{11}{12}, \frac{13}{18}$

4. $\frac{1}{6}, \frac{2}{3}, \frac{4}{12}$

5. $\frac{2}{4}, \frac{3}{8}, \frac{1}{2}$

6. $\frac{4}{5}, \frac{6}{10}, \frac{3}{10}$

7. $\frac{2}{5}, \frac{12}{15}, \frac{2}{3}$

8. $\frac{6}{12}, \frac{3}{4}, \frac{1}{3}$

9. $\frac{1}{2}, \frac{7}{9}, \frac{1}{6}$

10. $\frac{3}{20}, \frac{1}{4}, \frac{5}{10}$

Least Common Denominator Solutions 1

- 1. LCD = 45**
- 2. LCD = 36**
- 3. LCD = 72**
- 4. LCD = 12**
- 5. LCD = 8**
- 6. LCD = 10**
- 7. LCD = 15**
- 8. LCD = 12**
- 9. LCD = 18**
- 10. LCD = 20**

Least Common Denominator 2

Find the least common denominator.

1. $\frac{3}{4}$ and $\frac{9}{10}$

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

3. $\frac{1}{4}$ and $\frac{5}{12}$

4. $\frac{8}{9}$ and $\frac{1}{18}$

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

6. $\frac{5}{6}$ and $\frac{3}{16}$

7. $\frac{1}{9}$ and $\frac{7}{12}$

8. $\frac{5}{8}$ and $\frac{8}{9}$

9. $\frac{7}{9}$ and $\frac{1}{3}$

10. $\frac{3}{5}$ and $\frac{3}{10}$

Least Common Denominator Solutions 2

1. 20

2. 24

3. 12

4. 18

5. 18

6. 48

7. 36

8. 72

9. 9

10. 10

What Are Multiples?

Tutorial

The **multiples** of a number are the products that you can make from multiplication.

– They are whole numbers.

Number	Multiples	That's Because
5	5 , 10 , 15 , 20 , 25 , 30 , 35 , 40 , 45 , etc.	$5 \times 1 = 5$ $5 \times 2 = 10$ $5 \times 3 = 15$ $5 \times 4 = 20$ $5 \times 5 = 25$ $5 \times 6 = 30$ $5 \times 7 = 35$ $5 \times 8 = 40$ $5 \times 9 = 45$ Etc.

Multiples Cheat Sheet

Let us review the first ten multiples of numbers 2 through 10.

Number	First Ten Multiples
2	2 , 4 , 6 , 8 , 10 , 12 , 14 , 16 , 18 , 20
3	3 , 6 , 9 , 15 , 18 , 21 , 24 , 27 , 30 , 33
4	4 , 8 , 12 , 16 , 20 , 24 , 28 , 32 , 36 , 40
5	5 , 10 , 15 , 20 , 25 , 30 , 35 , 40 , 45 , 50
6	6 , 12 , 18 , 24 , 30 , 36 , 42 , 48 , 54 , 60
7	7 , 14 , 21 , 28 , 35 , 42 , 49 , 56 , 63 , 70
8	8 , 16 , 24 , 32 , 40 , 48 , 56 , 64 , 72 , 80
9	9 , 18 , 27 , 36 , 45 , 54 , 63 , 72 , 81 , 90
10	10 , 20 , 30 , 40 , 50 , 60 , 70 , 80 , 90 , 100

Least Common Multiples (LCM)

The **least common multiple (LCM)** is the lowest shared multiple between two numbers.

To find the common denominator, we'll use the LCM.

Least Common Multiple Examples

Number Pairs	Multiples	Least Common Multiple
3	3, 6, 9, 12, 15, 18, etc.	12
4	4, 8, 12, 16, 20, 24, etc.	
3	3, 6, 9, 12, 15, 18, etc.	15
5	5, 10, 15, 20, 25, etc.	
6	6, 12, 18, 24, 30, etc.	24
8	8, 16, 24, 32, 40, etc.	

Least Common Multiple 1

Find the least common multiple of the numerators.

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

2. $\frac{4}{5}$ $\frac{2}{4}$

3. $\frac{7}{9}$ $\frac{4}{7}$

4. $\frac{9}{12}$ $\frac{2}{3}$

5. $\frac{1}{5}$ $\frac{15}{19}$

6. $\frac{2}{6}$ $\frac{6}{8}$

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

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

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

10. $\frac{5}{7}$ $\frac{9}{20}$

Least Common Multiple Solutions 1

(These are the least common multiples of the numerators, not denominators)

1. 2

2. 4

3. 28

4. 6

5. 15

6. 3

7. 3

8. 2

9. 2

10. 45

Let's Compare Fractions

Tutorial

Which fraction is larger $\frac{1}{2}$ or $\frac{3}{4}$?

We can use what we learned in the previous chapter about common denominators to compare fractions.

Step 1:

Let's find the common denominator for $\frac{1}{2}$ and $\frac{3}{4}$.

- We find the common denominator by finding a pair of fractions that are equivalent to the fractions $\frac{1}{2}$ and $\frac{3}{4}$.
- Multiply the numerator and the denominator of the fraction by the same number to get an equivalent fraction.
- We'll choose the numbers in each case so that the two new fractions (which are equivalent to $\frac{1}{2}$ and $\frac{3}{4}$) have the same denominator.
- The denominators of these fractions are 2 and 4. What number is a multiple of both 2 and 4?

Number	Multiples
2	2, 4, 6, 8, 10, 12, 14, etc.
4	4, 8, 12, 16, 20, 24, 28, etc.

The number 4 is the smallest multiple of both 2 and 4.

Therefore, we'll make a common denominator of 4.

Step 2:

Multiply the numerator and denominator of $\frac{1}{2}$ by 2 in order to make an equivalent fraction with a denominator of 4.

Step 3:

Multiply the numerator and denominator of $\frac{3}{4}$ by 1 to make an equivalent fraction with a denominator of 4. Multiplying by 1 doesn't change the fraction so we still have $\frac{3}{4}$.

Now, the two fractions $\frac{2}{4}$ and $\frac{3}{4}$ have the same denominator.

Step 4:

We can compare the fractions now because they have the same denominator.

When we compare fractions with the same denominator, we look at each numerator.

In this case, the numerator 3 is larger than the numerator 2, so $\frac{3}{4}$ is greater than $\frac{2}{4}$.

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

Comparing Fractions 1

Write the correct comparison symbol (<, > or =) in each box.

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

2) $\frac{4}{5}$ $\frac{4}{8}$

3) $\frac{3}{4}$ $\frac{2}{6}$

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

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

6) $\frac{5}{6}$ $\frac{4}{8}$

$$7) \frac{1}{6} \square \frac{2}{3}$$

$$8) \frac{5}{20} \square \frac{9}{10}$$

$$9) \frac{4}{6} \square \frac{1}{4}$$

$$10) \frac{7}{11} \square \frac{2}{4}$$

Comparing Fractions Solutions 1

1. $\frac{2}{3} > \frac{1}{8}$

2. $\frac{4}{5} > \frac{4}{8}$

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

4. $\frac{2}{3} > \frac{1}{4}$

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

6. $\frac{5}{6} > \frac{4}{8}$

7. $\frac{1}{6} < \frac{2}{3}$

8. $\frac{5}{20} < \frac{9}{10}$

9. $\frac{4}{6} > \frac{1}{4}$

10. $\frac{7}{11} > \frac{2}{4}$

Comparing Fractions 2

Write the correct comparison symbol (<, > or =) in each box.

$$1) \frac{2}{5} \boxed{\phantom{< > =}} \frac{4}{7}$$

$$6) \frac{6}{12} \boxed{\phantom{< > =}} \frac{6}{9}$$

$$2) \frac{21}{35} \boxed{\phantom{< > =}} \frac{16}{40}$$

$$7) \frac{1}{4} \boxed{\phantom{< > =}} \frac{1}{3}$$

$$3) \frac{60}{144} \boxed{\phantom{< > =}} \frac{12}{24}$$

$$8) \frac{10}{10} \boxed{\phantom{< > =}} \frac{6}{6}$$

$$4) \frac{5}{6} \boxed{\phantom{< > =}} \frac{33}{42}$$

$$9) \frac{1}{1} \boxed{\phantom{< > =}} \frac{9}{9}$$

$$5) \frac{15}{21} \boxed{\phantom{< > =}} \frac{4}{7}$$

$$10) \frac{11}{11} \boxed{\phantom{< > =}} \frac{4}{10}$$

Comparing Fractions Solutions 2

1. $<$

6. $<$

2. $>$

7. $<$

3. $<$

8. $=$

4. $>$

9. $=$

5. $>$

10. $>$

Equivalent Fractions Tutorial

We need to understand equivalent fractions before we can compare fractions. Let us take a look at equivalent fractions.

Equivalent Fractions Examples

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

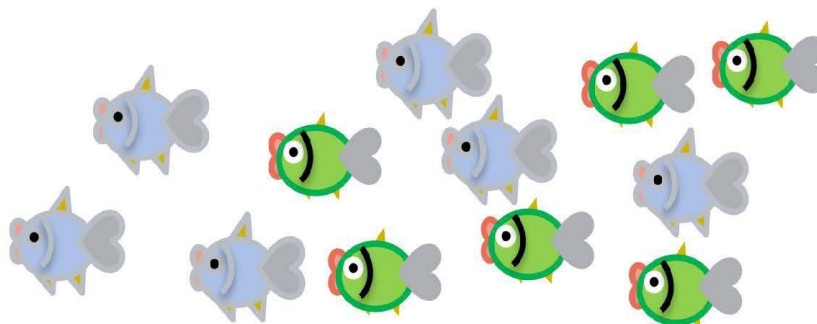
$$\frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$$

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

$$\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$$

Note: Multiplying the numerator and the denominator by the same nonzero whole number will change that fraction into an equivalent fraction but it will not change the value.

Showing Equivalent Fractions



$\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, and $\frac{6}{12}$ are equivalent fractions

$\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$	$\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{12}$	=	$\frac{6}{12}$
$\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$	$\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$ $\frac{1}{8}$	=	$\frac{4}{8}$
$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$	$\frac{1}{6}$ $\frac{1}{6}$ $\frac{1}{6}$	=	$\frac{3}{6}$
$\frac{1}{4}$ $\frac{1}{4}$	$\frac{1}{4}$ $\frac{1}{4}$	=	$\frac{2}{4}$

Equivalent Fractions 1

Complete the equivalent fractions.

1. $\frac{\underline{4}}{12} = \frac{\underline{\quad}}{6}$

2. $\frac{1}{2} = \frac{\underline{5}}{\underline{\quad}}$

3. $\frac{\underline{2}}{3} = \frac{\underline{\quad}}{9}$

4. $\frac{\underline{3}}{7} = \frac{9}{\underline{\quad}}$

5. $\frac{\underline{2}}{5} = \frac{\underline{\quad}}{15}$

6. $\frac{\underline{5}}{6} = \frac{\underline{\quad}}{18}$

7. $\frac{\underline{4}}{9} = \frac{16}{\underline{\quad}}$

8. $\frac{1}{4} = \frac{\underline{6}}{\underline{\quad}}$

9. $\frac{\underline{10}}{11} = \frac{\underline{50}}{\underline{\quad}}$

10. $\frac{\underline{7}}{9} = \frac{\underline{49}}{\underline{\quad}}$

Equivalent Fractions Solutions 1

1. 2

2. 10

3. 6

4. 21

5. 6

6. 15

7. 36

8. 24

9. 55

10. 63

Equivalent Fractions 2

Complete the equivalent fractions.

$$1. \frac{1}{3} = \frac{\quad}{12}$$

$$2. \frac{4}{5} = \frac{12}{\quad}$$

$$3. \frac{6}{7} = \frac{\quad}{42}$$

$$4. \frac{2}{6} = \frac{\quad}{24}$$

$$5. \frac{3}{8} = \frac{12}{\quad}$$

$$6. \frac{6}{9} = \frac{\quad}{45}$$

$$7. \frac{1}{10} = \frac{\quad}{30}$$

$$8. \frac{2}{4} = \frac{14}{\quad}$$

$$9. \frac{5}{12} = \frac{\quad}{36}$$

$$10. \frac{9}{11} = \frac{27}{\quad}$$

Equivalent Fractions Solutions 2

1. 4

2. 15

3. 36

4. 8

5. 32

6. 30

7. 3

8. 28

9. 15

10. 33

HOW TO ADD FRACTIONS

Tutorial

Add the equation: $\frac{2}{3} + \frac{1}{4} =$

Step 1:

Find the common denominator of 3 and 4.

To find the common denominator, we need to find equivalent fractions for the original fractions $\frac{2}{3}$ and $\frac{1}{4}$.

The equivalent fractions we make from $\frac{2}{3}$ and $\frac{1}{4}$ need to have the same denominator.

We know that 12 is a multiple of both 3 and 4, so we can make 12 the common denominator.

Step 2:

Multiply the numerator and denominator of $\frac{2}{3}$ by 4 (because $4 \times 3 = 12$)

in order to make an equivalent fraction with a denominator of 12.

$$\frac{2}{3} = \frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$$

Now we have a denominator of 12, which is what we want.

Step 3: Multiply the Numerator and Denominator

Multiply the numerator and denominator of $\frac{1}{4}$ by 3 (because $4 \times 3 = 12$).

$$\frac{1}{4} = \frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$$

Now, we have a denominator of 12, which is what we want.

Step 4: We're ready to add the fractions.

Now we can simply add the numerators of these two fractions.

$$\frac{3}{12} + \frac{8}{12} = \frac{11}{12}$$

Since $\frac{3}{12}$ is an equivalent fraction of $\frac{1}{4}$ and $\frac{8}{12}$ is an equivalent

fraction of $\frac{2}{3}$, we can say that:

$$\frac{2}{3} + \frac{1}{4} = \frac{11}{12}$$

Adding Fractions 1

Add up the fractions. Simplify the answer if needed.

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

2. $\frac{3}{9} + \frac{1}{3} =$

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

4. $\frac{2}{7} + \frac{1}{3} =$

5. $\frac{8}{20} + \frac{1}{10} =$

6. $\frac{5}{12} + \frac{4}{15} =$

7. $\frac{2}{5} + \frac{1}{8} =$

8. $\frac{3}{10} + \frac{2}{15} =$

9. $\frac{1}{3} + \frac{4}{9} =$

10. $\frac{3}{6} + \frac{2}{8} =$

Adding Fractions 1 Solutions

1. $\frac{11}{12}$

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

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

4. $\frac{13}{21}$

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

6. $\frac{41}{60}$

7. $\frac{21}{40}$

8. $\frac{13}{30}$

9. $\frac{7}{9}$

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

Adding Fractions 2

Add the following fractions. Simplify the answer if needed.

1. $\frac{1}{2} + \frac{1}{4} =$

2. $\frac{1}{5} + \frac{4}{15} =$

3. $\frac{1}{4} + \frac{5}{8} =$

4. $\frac{5}{16} + \frac{1}{8} =$

5. $\frac{4}{5} + \frac{3}{25} =$

6. $\frac{15}{36} + \frac{1}{9} =$

7. $\frac{12}{35} + \frac{1}{5} =$

8. $\frac{5}{18} + \frac{1}{9} =$

9. $\frac{4}{9} + \frac{3}{18} =$

10. $\frac{4}{5} + \frac{4}{25} =$

Adding Fractions 2 Solutions

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

2. $\frac{7}{15}$

3. $\frac{7}{8}$

4. $\frac{7}{16}$

5. $\frac{23}{25}$

6. $\frac{19}{36}$

7. $\frac{19}{35}$

8. $\frac{7}{18}$

9. $\frac{11}{18}$

10. $\frac{24}{25}$

HOW TO SUBTRACT FRACTIONS

Tutorial

Example 1:

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

Step 1:

Find the common denominator of 2 and 4.

To find the common denominator, we need to find equivalent fractions for the original fractions $\frac{3}{4}$ and $\frac{1}{2}$.

The equivalent fractions we make from $\frac{3}{4}$ and $\frac{1}{2}$ need to have the same

denominator.

We know that 4 is a multiple of both 2 and 4, so we can make 4 the common denominator.

Step 2:

Multiply the numerator and denominator of $\frac{3}{4}$ by 1,

(because $4 \times 1 = 4$) in order to make an equivalent fraction with a denominator of 4.

We can keep $\frac{3}{4}$ the same because it already has a denominator of 4.

Step 3:

Multiply the numerator and denominator of $\frac{1}{2}$ by 2 (because $2 \times 2 = 4$).

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

Now, we have a denominator of 4, which is what we want.

Step 4:

We're ready to subtract the fractions.

Now we can simply subtract the numerators of these two fractions.

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

Since $\frac{2}{4}$ is an equivalent fraction of $\frac{1}{2}$, we know that,

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

Subtracting Fractions 1

Subtract the fractions. Simplify the answer if needed.

1. $\frac{7}{12} - \frac{3}{9} =$

2. $\frac{3}{6} - \frac{1}{3} =$

3. $\frac{3}{8} - \frac{2}{6} =$

4. $\frac{6}{8} - \frac{1}{6} =$

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

6. $\frac{4}{7} - \frac{2}{5} =$

7. $\frac{7}{8} - \frac{5}{8} =$

8. $\frac{6}{7} - \frac{1}{2} =$

9. $\frac{5}{9} - \frac{1}{3} =$

10. $\frac{2}{7} - \frac{1}{5} =$

Subtracting Fractions 1 Solutions

1. $\frac{1}{4}$

2. $\frac{1}{6}$

3. $\frac{1}{24}$

4. $\frac{7}{12}$

5. $\frac{29}{42}$

6. $\frac{6}{35}$

7. $\frac{1}{4}$

8. $\frac{5}{14}$

9. $\frac{2}{9}$

10. $\frac{3}{35}$

Subtracting Fractions 2

Subtract the fractions. Simplify the answer if needed.

$$1. \quad \frac{1}{2} - \frac{5}{12} =$$

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

$$3. \quad \frac{4}{7} - \frac{5}{14} =$$

$$4. \quad \frac{3}{5} - \frac{7}{15} =$$

$$5. \quad \frac{11}{15} - \frac{3}{5} =$$

$$6. \quad \frac{21}{28} - \frac{3}{4} =$$

$$7. \quad \frac{1}{2} - \frac{4}{12} =$$

$$8. \quad \frac{13}{21} - \frac{1}{7} =$$

$$9. \quad \frac{13}{24} - \frac{1}{3} =$$

$$10. \quad \frac{3}{4} - \frac{6}{16} =$$

Subtracting Fractions 2 Solutions

1. $\frac{1}{12}$

2. $\frac{1}{6}$

3. $\frac{3}{14}$

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

5. $\frac{2}{15}$

6. 0

7. $\frac{1}{6}$

8. $\frac{10}{21}$

9. $\frac{5}{24}$

10. $\frac{7}{16}$

Equivalent Fractions 1

Complete these equivalent fractions.

1. $\frac{1}{4} = \frac{\quad}{24}$

2. $\frac{\quad}{7} = \frac{12}{21}$

3. $\frac{4}{\quad} = \frac{40}{100}$

4. $\frac{3}{7} = \frac{\quad}{28}$

5. $\frac{2}{4} = \frac{\quad}{16}$

6. $\frac{1}{2} = \frac{6}{\quad}$

7. $\frac{5}{\quad} = \frac{15}{9}$

8. $\frac{4}{\quad} = \frac{16}{20}$

9. $\frac{6}{\quad} = \frac{18}{9}$

10. $\frac{\quad}{9} = \frac{8}{36}$

Equivalent Fractions 1 Solutions

1. $\frac{6}{24}$

2. $\frac{4}{7}$

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

4. $\frac{12}{28}$

5. $\frac{8}{16}$

6. $\frac{6}{12}$

7. $\frac{5}{3}$

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

9. $\frac{6}{3}$

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

Equivalent Fractions 2

1. $\frac{5}{\quad} = \frac{15}{27}$

2. $\frac{9}{7} = \frac{\quad}{49}$

3. $\frac{21}{\quad} = \frac{7}{12}$

4. $\frac{12}{7} = \frac{48}{\quad}$

5. $\frac{8}{\quad} = \frac{40}{30}$

6. $\frac{4}{5} = \frac{16}{\quad}$

7. $\frac{2}{\quad} = \frac{10}{25}$

8. $\frac{5}{6} = \frac{\quad}{18}$

9. $\frac{4}{7} = \frac{28}{\quad}$

10. $\frac{1}{8} = \frac{3}{\quad}$

Equivalent Fractions 2 Solutions

1. $\frac{5}{9}$

2. $\frac{63}{49}$

3. $\frac{21}{36}$

4. $\frac{48}{28}$

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

6. $\frac{16}{20}$

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

8. $\frac{15}{18}$

9. $\frac{28}{49}$

10. $\frac{3}{24}$