

# What Is The Product Of 3/4 And -6/7?-7/8-9/149/147/8

**What Is The Product Of 3/4 And -6/7?-7/8-9/149/147/8** is a complex expression that involves multiple fractions and operations, which can seem daunting at first glance. However, by breaking down the problem step-by-step, we can understand how to evaluate it accurately. This article aims to clarify the process of calculating such an expression, emphasizing key mathematical concepts like fraction multiplication, subtraction, and order of operations. Whether you're a student brushing up on fractions or someone interested in mathematical problem-solving, this guide will help you navigate through this intricate expression with confidence.

## Understanding the Components of the Expression

Before diving into calculations, it's essential to parse the given expression properly. The expression appears to be a concatenation of fractions and operations, which can be confusing without proper segmentation. Let's analyze it carefully.

## Breaking Down the Expression

The expression as presented:

3/4 And -6/7?-7/8-9/149/147/8

This appears to be a string of fractions and symbols. To interpret it correctly, consider the following:

- The phrase "What Is The Product Of 3/4 And -6/7?" suggests the initial operation involves multiplying 3/4 by -6/7.
- The subsequent segment "-7/8-9/149/147/8" might be a sequence of sub-expressions or additional operations, possibly involving subtraction and further fractions.

Given the ambiguity, the most logical interpretation is:

Calculate the product of 3/4 and -6/7, then subtract the subsequent fractions as indicated.

Thus, we can frame the problem as:

$$(3/4) \times (-6/7) - 7/8 - 9/149/147/8$$

Note: The segment "9/149/147/8" can be interpreted as a chain of divisions or as a single complex fraction. For clarity, assume it's a chain of divisions: 9 divided by 149 divided by 147 divided by 8.

Clarification of the Expression:

- First part:  $(3/4) \times (-6/7)$

- Second part: subtract  $\frac{7}{8}$
- Third part: subtract the result of 9 divided by 149, then divided by 147, then divided by 8.

This interpretation aligns with standard mathematical operations.

## Step-by-Step Calculation

Let's proceed step-by-step to evaluate the entire expression.

### Step 1: Calculate the product of $\frac{3}{4}$ and $-\frac{6}{7}$

Multiplying fractions:

$$\frac{3}{4} \times \left(-\frac{6}{7}\right) = -\frac{3 \times 6}{4 \times 7} = -\frac{18}{28}$$

Simplify the fraction:

$$-\frac{18}{28} = -\frac{9}{14}$$

Result after Step 1:

$$-\frac{9}{14}$$

### Step 2: Subtract $\frac{7}{8}$ from the result

Express both fractions with a common denominator, or convert to decimal for simplicity.

Common denominator of 14 and 8 is 56.

Convert:

$$-\frac{9}{14} = -\frac{36}{56}$$

$$\frac{7}{8} = \frac{49}{56}$$

Subtract:

$$\begin{aligned} & \left[ \right. \\ & - \frac{36}{56} - \frac{49}{56} = - \frac{36 + 49}{56} = - \frac{85}{56} \\ & \left. \right] \end{aligned}$$

Result after Step 2:

$$\begin{aligned} & \left[ \right. \\ & - \frac{85}{56} \\ & \left. \right] \end{aligned}$$

### Step 3: Calculate the nested division 9 / 149 / 147 / 8

Operations are performed from left to right:

$$\begin{aligned} & \left[ \right. \\ & \left( \frac{9}{149} \right) \div 147 \div 8 \\ & \left. \right] \end{aligned}$$

which is equivalent to:

$$\begin{aligned} & \left[ \right. \\ & \left( \frac{9}{149} \right) \div 147 \div 8 \\ & \left. \right] \end{aligned}$$

Recall that dividing by a number is equivalent to multiplying by its reciprocal.

Performing step-by-step:

1. Divide  $\left( \frac{9}{149} \right)$  by 147:

$$\begin{aligned} & \left[ \right. \\ & \frac{9}{149} \div 147 = \frac{9}{149} \times \frac{1}{147} = \frac{9}{149 \times 147} \\ & \left. \right] \end{aligned}$$

Calculate denominator:

$$\left( 149 \times 147 \right):$$

$$- 149 \times 147 = ?$$

Let's compute:

$$149 \times 147$$

$$149 \times 147 = (149 \times 100) + (149 \times 47)$$

$$= 14,900 + (149 \times 47)$$

Calculate  $149 \times 47$ :

$$- 149 \times 47$$

$$= (150 - 1) \times 47$$

$$= 150 \times 47 - 1 \times 47 = (150 \times 47) - 47$$

$$150 \times 47:$$

$$= (150 \times 40) + (150 \times 7) = 6,000 + 1,050 = 7,050$$

Now subtract 47:

$$7,050 - 47 = 7,003$$

So,

$$149 \times 147 = 14,900 + 7,003 = 21,903$$

Therefore,

$$\frac{9}{149 \times 147} = \frac{9}{21,903}$$

2. Now divide this result by 8:

$$\frac{9}{21,903} \div 8 = \frac{9}{21,903} \times \frac{1}{8} = \frac{9}{21,903 \times 8}$$

Calculate denominator:

$$21,903 \times 8:$$

$$- 21,903 \times 8$$

$$= (20,000 + 1,903) \times 8$$

$$= 20,000 \times 8 + 1,903 \times 8$$

$$= 160,000 + (1,900 \times 8 + 3 \times 8)$$

$$= 160,000 + (15,200 + 24) = 160,000 + 15,224 = 175,224$$

Result of nested division:

$$\frac{9}{175,224}$$

## Step 4: Combine all parts of the expression

Now, recall that after Step 2, the value was:

$$\left[ -\frac{85}{56} \right]$$

and the nested division is:

$$\left[ \frac{9}{175,224} \right]$$

Assuming the original expression is:

$$\left[ \left( \text{Result of Step 2} \right) - \left( \text{Nested division} \right) \right]$$

we substitute:

$$\left[ -\frac{85}{56} - \frac{9}{175,224} \right]$$

To combine these, find a common denominator.

Calculate least common denominator (LCD):

- Denominator 56 and 175,224.

Prime factorization:

$$56 = 2^3 \times 7$$

175,224:

Let's factor 175,224:

Divide step-wise:

$$- 175,224 \div 2 = 87,612$$

$$- 87,612 \div 2 = 43,806$$

$$- 43,806 \div 2 = 21,903 \text{ (which is odd, stop dividing by 2)}$$

Now, factor 21,903:

-  $21,903 \div 3 = 7,301$

- 7,301 is not divisible by 3 (since  $7+3+0+1=11$ , not divisible by 3)

Check divisibility by 7:

$7,301 \div 7 \approx 1,043$ .

$7 \times 1,043 = 7,301$ , so yes.

So,

175,224:

$= 2^3 \times 3 \times 7 \times 1,043$

Hence, the LCD must include all prime factors:

- Highest powers:  $2^3$  (from 56 and 175,224), 3 (from 175,224), 7 (from 175,224), and 1,043.

Expressed explicitly:

$LCD = 2^3 \times 3 \times 7 \times 1,043$

Calculate:

$2^3 = 8$

$8 \times 3 = 24$

$24 \times 7 = 168$

$168 \times 1,043$ :

Calculate  $168 \times 1,043$ :

-  $168 \times 1,000 = 168,000$

-  $168 \times 43 = (168 \times 40) + (168 \times 3) = 6,720 + 504 = 7,224$

Add up:

$168,000 + 7,224 = 175,224$

This confirms the LCD is 175,224.

Now, express both fractions with denominator 175,224:

- Convert  $\left(-\frac{85}{56}\right)$ :

Recall 56 divides into 175,224:

$$175,224 \div 56:$$

Calculate:

$$56 \times 3,128 = ?$$

$$56 \times 3,128:$$

$$- 56 \times 3,000 = 168,000$$

$$- 56 \times 128 = ?$$

$$128 \times 56:$$

$$- 128 \times 50 = 6,400$$

$$- 128 \times 6 =$$

## Frequently Asked Questions

### What is the product of $\frac{3}{4}$ and $-\frac{6}{7}$ ?

The product of  $\frac{3}{4}$  and  $-\frac{6}{7}$  is  $-\frac{18}{28}$ , which simplifies to  $-\frac{9}{14}$ .

### How do you multiply fractions like $\frac{3}{4}$ and $-\frac{6}{7}$ ?

To multiply fractions, multiply the numerators and denominators separately:  $(3 \times -6) / (4 \times 7) = -18/28$ , which simplifies to  $-\frac{9}{14}$ .

### What is the result of subtracting $\frac{7}{8}$ from the product of $\frac{3}{4}$ and $-\frac{6}{7}$ ?

First, multiply  $\frac{3}{4}$  and  $-\frac{6}{7}$  to get  $-\frac{9}{14}$ , then subtract  $\frac{7}{8}$ :  $-\frac{9}{14} - \frac{7}{8}$ , which requires common denominators to simplify further.

### How do I simplify the expression $-\frac{9}{14} - \frac{7}{8}$ ?

Find a common denominator, which is 56. Convert each fraction:  $-\frac{9}{14} = -\frac{36}{56}$  and  $\frac{7}{8} = \frac{49}{56}$ . Then subtract:  $-\frac{36}{56} - \frac{49}{56} = -\frac{85}{56}$ .

### What is the value of $-\frac{85}{56}$ in decimal form?

Dividing -85 by 56 gives approximately -1.5179.

### What is the overall simplified result of the entire expression:

## **$(\frac{3}{4}) (-\frac{6}{7}) - \frac{7}{8}$ ?**

First, multiply  $\frac{3}{4}$  and  $-\frac{6}{7}$  to get  $-\frac{9}{14}$ . Then, convert to common denominator with  $\frac{7}{8}$  (which becomes  $\frac{49}{56}$ ), and subtract:  $-\frac{36}{56} - \frac{49}{56} = -\frac{85}{56}$ , or approximately  $-1.5179$ .

## **Are there any errors in the expression 'What Is The Product Of $\frac{3}{4}$ And $-\frac{6}{7}$ ? $-\frac{7}{8} - \frac{9}{149/147/8}$ '?**

Yes, the expression appears to be a concatenation of multiple parts. Properly, it should be separated into multiplication and subtraction components:  $(\frac{3}{4}) (-\frac{6}{7})$  minus  $\frac{7}{8}$ , and possibly other terms, which need clarification.

## **How do I interpret the combined expression ' $-\frac{7}{8} - \frac{9}{149/147/8}$ '?**

The expression seems ambiguous. If intended as ' $-\frac{7}{8}$  minus  $\frac{9}{149}$  minus  $\frac{147}{8}$ ', then each term should be evaluated separately, but as written, it requires clarification to interpret accurately.

## **What is the importance of understanding fraction multiplication and subtraction in real-world problems?**

Understanding how to multiply and subtract fractions helps in various real-life situations, such as cooking, finance, and engineering, where precise measurements and calculations are essential.

## **How can I verify the result of multiplying fractions like $\frac{3}{4}$ and $-\frac{6}{7}$ ?**

You can verify by cross-multiplying or converting to decimal form and comparing results to ensure accuracy.

## **Additional Resources**

What Is The Product Of  $\frac{3}{4}$  And  $-\frac{6}{7}$ ?  $-\frac{7}{8} - \frac{9}{149/147/8}$  is a complex expression that combines multiple fractions and operations, making it an intriguing example of how to work with rational numbers in algebra. Understanding how to evaluate such an expression requires a clear step-by-step approach, emphasizing fundamental concepts of fractions, multiplication, subtraction, and the order of operations. This guide will break down the problem thoroughly, helping you navigate through the intricacies of mixed fractional expressions and ultimately find the correct answer with confidence.

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### **Understanding the Expression**

Before diving into calculations, it's essential to interpret the expression correctly. The expression appears as:

$\frac{3}{4}$  and  $-\frac{6}{7}$  ?  $-\frac{7}{8} - \frac{9}{149/147/8}$



At first glance, the expression seems to contain some ambiguity, especially around the sequence of operations and the placement of fractions. To analyze it effectively, we'll restate it in a clearer algebraic form, assuming typical conventions.

### Clarifying the Expression

Given the original string, a plausible interpretation is:

$$(3/4) (-6/7) - (7/8) - (9/149/147/8)$$

Alternatively, it might involve consecutive fractions that need to be evaluated carefully. Since the expression as written is somewhat ambiguous, we'll consider it as:

$$(3/4) (-6/7) - (7/8) - (9/149/147/8)$$

Now, the last term is especially tricky: `9/149/147/8`. It could be read as:

- 9 divided by 149, then divided by 147, then divided by 8, or
- 9 divided by the entire chain of fractions.

Given the multiple divisions, a common approach is to interpret the chain as sequential divisions:

$$9 / 149 / 147 / 8$$

which is equivalent to:

$$(((9 / 149) / 147) / 8)$$

For the purpose of clarity, we'll proceed with this interpretation.

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### Step-by-Step Breakdown

1. Evaluate the first term:  $(3/4) (-6/7)$

Multiplying fractions involves straightforward numerator and denominator multiplication:

$$\left[ \frac{3}{4} \times \left( -\frac{6}{7} \right) = \frac{3 \times (-6)}{4 \times 7} = \frac{-18}{28} \right]$$

Simplify the resulting fraction:

$$\left[ \frac{-18}{28} = \frac{-9}{14} \right]$$

(Dividing numerator and denominator by 2)

$$\text{So, } (3/4) (-6/7) = -9/14$$

2. Evaluate the second term:  $-(7/8)$

This is straightforward:

$$\left[ -\frac{7}{8} \right]$$

3. Evaluate the third term:  $9 / 149 / 147 / 8$

As discussed, interpret as sequential divisions:

$$\left[ \left( \frac{9}{149} \right) \div 147 \div 8 \right]$$

which simplifies to:

$$\left[ \left( \frac{9}{149} \div 147 \right) \div 8 \right]$$

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Calculating the Chain of Divisions

Step 1: Compute  $\left( \frac{9}{149} \div 147 \right)$

Dividing by a number is equivalent to multiplying by its reciprocal:

$$\left[ \frac{9}{149} \times \frac{1}{147} = \frac{9}{149 \times 147} \right]$$

Calculate the denominator:

$$-(149 \times 147)$$

Let's compute:

$$\left[ 149 \times 147 \right]$$

Break down:

$$\begin{aligned} &-(150 \times 147 = 22,050) \\ &- \text{Subtract } (1 \times 147 = 147) \end{aligned}$$

So:

$$\begin{aligned} & 149 \times 147 = 22,050 - 147 = 21,903 \end{aligned}$$

Thus,

$$\frac{9}{149 \times 147} = \frac{9}{21,903}$$

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Step 2: Divide this result by 8

Dividing by 8 is multiplying by  $\left(\frac{1}{8}\right)$ :

$$\frac{9}{21,903} \times \frac{1}{8} = \frac{9}{21,903 \times 8}$$

Calculate denominator:

$$-(21,903 \times 8)$$

Compute:

$$\begin{aligned} & -(20,000 \times 8 = 160,000) \\ & -(1,903 \times 8 = 15,224) \end{aligned}$$

Adding:

$$\begin{aligned} & 160,000 + 15,224 = 175,224 \end{aligned}$$

Therefore,

$$\frac{9}{21,903 \times 8} = \frac{9}{175,224}$$

This is the value of the third term.

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Final Expression Assembly

Now, compiling all parts:

$$\text{Total} = \left(-\frac{9}{14}\right) - \left(\frac{7}{8}\right) - \left(\frac{9}{175,224}\right)$$

\]

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### Simplifying the Expression

To combine these fractions, find a common denominator.

#### 1. Find Least Common Denominator (LCD)

The denominators are:

- 14
- 8
- 175,224

Factor each to aid in finding the LCD.

- $14 = 2 \times 7$
- $8 = 2^3$
- 175,224

Let's factor 175,224:

Divide by 2 repeatedly:

- $175,224 / 2 = 87,612$
- $87,612 / 2 = 43,806$
- $43,806 / 2 = 21,903$

Now, 21,903:

- $21,903 / 3 = 7,301$  (since  $2+1+9+0+3=15$ , divisible by 3)

Check divisibility:

- $7,301 / 7 = 1,043$

So,  $7,301 / 7 = 1,043$

Now, 1,043:

- $1,043 / 11 = 95$  (since  $11 \times 95 = 1,045$ ), close but not exact.

Alternatively, test 1,043:

- $1,043 / 13 = 80.23$  (not exact)

So, the prime factorization:

- $175,224 = 2^3 \times 3 \times 7 \times 1,043$

Check if 1,043 is prime:

-  $1,043 / 13 \approx 80.23$ , so no.

Test divisibility:

-  $1,043 / 17 \approx 61.35$ , no.

-  $1,043 / 19 \approx 54.89$ , no.

-  $1,043 / 23 \approx 45.35$ , no.

-  $1,043 / 29 \approx 36.0$ , very close.

Calculate  $29 \times 36 = 1,044$ , so  $29 \times 36 = 1,044$ , so 1,043 is 1 less than 1,044, so not divisible by 29.

Similarly, check 1,043:

- 1,043 is prime or composite? Let's assume it's prime for simplicity, given the above.

Therefore, the LCD must include:

- the highest powers of 2:  $2^3$

- 3

- 7

- 1,043

The LCD =  $2^3 \times 3 \times 7 \times 1,043$

Calculating:

-  $2^3 = 8$

-  $8 \times 3 = 24$

-  $24 \times 7 = 168$

-  $168 \times 1,043$

Compute  $168 \times 1,043$ :

-  $168 \times 1,000 = 168,000$

-  $168 \times 43 = 168 \times 40 + 168 \times 3 = 6,720 + 504 = 7,224$

Adding:

\[  
 $168,000 + 7,224 = 175,224$   
\]

which matches our denominator.

Thus, the LCD is 175,224.

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## Expressing Each Fraction with the LCD Denominator

1. Convert  $(-\frac{9}{14})$ :

Calculate:

$$\begin{aligned} & \backslash \\ & \text{Multiplier} = \frac{175,224}{14} \\ & \backslash \end{aligned}$$

Calculate:

$$- 14 \times 12,516 = ?$$

Check:

$$14 \times 12,516:$$

$$- 14 \times 12,500 = 175,000$$

$$- 14 \times 16 = 224$$

$$\text{Sum: } 175,000 + 224 = 175,224$$

Perfect.

So, numerator:

$$\begin{aligned} & \backslash \\ & -9 \times 12,516 = -112,644 \\ & \backslash \end{aligned}$$

2. Convert  $(\frac{7}{8})$ :

Calculate:

$$\begin{aligned} & \backslash \\ & \frac{175,224}{8} = 21,903 \\ & \backslash \end{aligned}$$

Numerator:

$$\begin{aligned} & \backslash \\ & 7 \times 21,903 = 153,321 \\ & \backslash \end{aligned}$$

3. Convert  $(\frac{9}{175,224})$ :

Already with denominator 175,224, numerator remains 9.

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Final Combined Expression

Expressed over common denominator

## **What Is The Product Of 3 4 And 6 7 7 8 9 149 147 8**

What Is The Product Of 3 4 And 6 7 7 8 9 149 147 8

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