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1 Look for the integer. A mixed number will contain a whole number and a fraction. The whole number should be positive, negative, or zero because it's an integer.[1] For example, in the mixed number $1\frac{3}{4}$, 1 is the integer. 2 Recognize the numerator. Look at the fraction and find the number above the dividing line. This number is the numerator and it will tell you how many parts there are of the fraction.[2] In the example $1\frac{3}{4}$, 3 is the numerator. Advertisement 3 Find the denominator. Identify the number below the dividing line to find the denominator. This tells you how many parts it takes to make the whole number.[3] For example, 4 is the denominator in the mixed fraction $1\frac{3}{4}$. Advertisement 1 Change the mixed numbers into improper fractions. Multiply the integer by the denominator and add the numerator to come up with an improper fraction. Do this for both of the mixed numbers in your equation so you get 2 improper fractions.[4] [5] For example, to convert $3\frac{3}{4}$, $3 \times 4 = 12 + 3 = 15/4$. Another example, $1\frac{1}{2}$ would be $2 \times 1 = 2 + 1 = 3/2$. 2 Find a lowest common denominator if necessary. If your improper fractions don't have the same denominators, convert the fractions so they do. To find the lowest common denominator, multiply each part of a fraction by the other fraction's denominator.[6] [7] For example to find a lowest common denominator for $15/4 - 3/2$, multiply the 15 and 4 by 2 and multiply the 3 and 2 by 4. You should get $30/8 - 12/8$. Then you can subtract the fractions. If the denominators of both fractions are the same, you can skip this step. 3 Subtract the numerators. Once the denominators are the same, you can easily subtract the numerators to get your result.[8] [9] For example, $30/8 - 12/8 = 18/8$. 4 Convert the result to a mixed number. Divide the numerator by the denominator to get an integer and remainder.[10] [11] For example, $18 \div 8 = 2$ with a remainder of 2. This can be written as $2\frac{2}{8}$. If you'd like to convert the improper fraction into a decimal, simply divide the numerator by the denominator.[12] 5 Simplify the result if necessary. Look at the fraction or mixed number you got after subtracting and decide if you can reduce the fraction further. This will give you the simplest result.[13] The fraction in the example $2\frac{2}{8}$ can be reduced by 2 to get $2\frac{1}{4}$. Keep in mind that in some cases, you may not have a remainder. EXPERT TIP Joseph Meyer Math Teacher Joseph Meyer is a High School Math Teacher based in Pittsburgh, Pennsylvania. He is an educator at City Charter High School, where he has been teaching for over 7 years. Joseph is also the founder of Sandbox Math, an online learning community dedicated to helping students succeed in Algebra. His site is set apart by its focus on fostering genuine comprehension through step-by-step understanding (instead of just getting the correct final answer), enabling learners to identify and overcome misunderstandings and confidently take on any test they face. He received his MA in Physics from Case Western Reserve University and his BA in Physics from Baldwin Wallace University. To simplify fractions, you can divide both the numerator and denominator by a common factor. This creates a new, easier-to-use fraction with smaller common factors, but it represents the same value. For instance, if you divide both the numerator and denominator of $6/12$ by 2, you get $3/6$, which is equal to $1/2$. Advertisement 1 Subtract the whole numbers in the equation. Before you begin working with the fractions, identify the whole numbers and subtract them. If your equation is $3\frac{3}{4} - 1\frac{1}{2}$.[14] 2 Find a lowest common denominator for the fractions if necessary. Since you've already subtracted the whole numbers, you're ready to subtract the fractions. If they have a different denominator, multiply each part of a fraction by the other fraction's denominator.[15] For example, multiply 3 and 4 by 2 to get $6/8$. For the other fraction, multiply 1 and 2 by 4 to get $4/8$. If your fractions have the same denominator, you can skip this step. 3 Subtract the numerators of the fractions. Once the denominators are the same, just subtract the numerators in your equation. Remember not to subtract the denominators as well.[16] For the equation $6/8 - 4/8$, subtract 4 from 6 to get $2/8$. 4 Write and simplify the result. Write down the whole number that you already subtracted and place the fraction that you're left with next to it. Reduce the fraction if possible.[17] For $3\frac{3}{4} - 1\frac{1}{2}$, you'll get $2\frac{2}{8}$. Simplify $2/8$ by 2 to get $1/4$. Your finished answer will be $2\frac{1}{4}$. Advertisement Add New Question Question How do I subtract $2\frac{3}{4} - 11/12$? First change $2\frac{3}{4}$ to $2\frac{9}{12}$. Then change that to $33/12$. Then subtract $11/12$. That gives us $22/12$. Change that to $1\frac{10}{12}$, and reduce to $1\frac{5}{6}$. Question How do I solve this using the second method (subtract the whole numbers first): $4\frac{3}{7} - 2\frac{4}{7}$? Because the fraction in the subtrahend (the second mixed number) is larger than the fraction in the minuend (the first mixed number), you must "borrow" from the whole number in the minuend. Borrow 1 from the 4 in the minuend, but borrow it in the form of $7/7$, and combine it with the minuend's fraction, making that mixed number $3\frac{10}{7}$ (which has the same value as $4\frac{3}{7}$). Now you can use the second method in the above article: first subtract the second whole number from the new first whole number: $3 - 2 = 1$, which is the answer's whole number. Now subtract the second fraction from the new first fraction: $10/7 - 4/7 = 6/7$. The final answer is $1\frac{6}{7}$. Question How do I subtract $2\frac{1}{2}$ minus $5/12$ minus $7/8$? First convert all three numbers to fractions with 24 as the denominator (because 24 is the lowest common multiple of 2, 12, and 8). $2\frac{1}{2} = 60/24$, $5/12 = 10/24$, $7/8 = 21/24$. Now perform the subtractions: $60/24 - 10/24 - 21/24 = 29/24 = 1\frac{5}{24}$. See more answers Ask a Question Advertisement Thanks Advertisement This article was co-authored by Jake Adams and by wikiHow staff writer, Jessica Gibson. Jake Adams is an academic tutor and the owner of Simplifi EDU, a Santa Monica, California based online tutoring business offering learning resources and online tutors for academic subjects K-College, SAT & ACT prep, and college admissions applications. With over 14 years of professional tutoring experience, Jake is dedicated to providing his clients the very best online tutoring experience and access to a network of excellent undergraduate and graduate-level tutors from top colleges all over the nation. Jake holds a BS in International Business and Marketing from Pepperdine University. This article has been viewed 127,066 times. Co-authors: 19 Updated: March 24, 2025 Views: 127,066 Categories: Addition and Subtraction | Fractions Print Send fan mail to authors Thanks to all authors for creating a page that has been read 127,066 times. "When I was starting my homework, I had forgotten my notebook in school. I looked up the steps for my homework, and I fell on this website. I cant thank you enough."... more Share your story Understanding the foundation of mathematics is crucial when tackling more complex concepts like adding and subtracting mixed numbers. To excel in this area, it's essential to grasp several key prerequisite topics that form the building blocks of this skill. One fundamental concept to master is the negative exponent rule. While it may seem unrelated at first, understanding how to work with whole numbers and proper fractions is vital when dealing with mixed numbers. This knowledge helps in breaking down mixed numbers into their whole number and fractional components, making addition and subtraction more manageable. Another critical skill is multiplying improper fractions and mixed numbers. This topic is particularly relevant because it involves simplifying improper fractions, a process often required when adding or subtracting mixed numbers. Being proficient in this area allows for smoother conversions between improper fractions and mixed numbers during calculations. Perhaps the most directly related prerequisite is subtracting fractions with like denominators. This skill forms the core of subtracting mixed numbers, as you'll often need to perform this operation on the fractional parts. Mastering this concept ensures accuracy and efficiency when working with more complex mixed number problems. Understanding greatest common factors (GCF) is also crucial. When adding or subtracting mixed numbers, you may need to simplify fractions or find a common denominator. Knowledge of GCF helps in identifying the least common multiple of denominators, which is essential for these operations. Speaking of common denominators, proficiency in finding the least common multiple (LCM) is indispensable. This skill is particularly useful when adding or subtracting mixed numbers with different denominators. Understanding prime factorization for LCM allows you to quickly determine the common denominator needed for these operations. By mastering these prerequisite topics, you'll build a strong foundation for adding and subtracting mixed numbers. Each concept contributes to your overall understanding and ability to perform these operations accurately and efficiently. Remember, mathematics is a cumulative subject, and investing time in these fundamental skills will pay dividends as you progress to more advanced topics. So, take the time to review and practice these prerequisites your future self will thank you when tackling complex mixed number problems becomes second nature!Divisibility rulesDetermining common multiples Related Topics: More Lessons for Arithmetic Math Worksheets How to subtract mixed numbers? We will look at two methods that can be used to subtract mixed numbers. Method 1 We can convert the mixed numbers to improper fractions and then subtract them as fractions. The following example shows how to subtract mixed numbers by first converting them to improper fractions. Scroll down the page for more examples and solutions. The following video gives another example of subtracting mixed numbers using method 1. Method 2 We can subtract the whole number part and the fractional part of the mixed numbers separately. The following example shows how to subtract mixed numbers by subtracting the whole number part and the fractional part separately. Scroll down the page for more examples and solutions. The following video gives another example of subtracting mixed numbers using method 2. Show Step-by-step Solutions Subtracting mixed numbers with borrowing If the fractional part of the second mixed number is bigger than the fractional part of the fixed number then it would be necessary to "borrow" from the whole part before subtracting. The following example shows how to subtract mixed numbers with borrowing. Scroll down the page for more examples and solutions. The following video shows how to subtract mixed numbers with borrowing. Show Step-by-step Solutions Try out our new and fun Fraction Concoction Game. Add and subtract fractions to make exciting fraction concoctions following a recipe. There are four levels of difficulty: Easy, medium, hard and insane. Practice the basics of fraction addition and subtraction or challenge yourself with the insane level. We welcome your feedback, comments and questions about this site or page. Please submit your feedback or enquiries via our Feedback page. 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Remember, a proper fraction is a fraction where the denominator is larger in value than the numerator. In order to work on subtracting mixed fractions with regrouping, you need to review how to subtract mixed fractions without regrouping first. Follow the steps below: $4\frac{7}{8} - 2\frac{1}{4} = 1$. Line up the two mixed numbers, so the one with the largest value is first. The one with the smallest value should be second. 2. Subtract the fractions first. Remember, they have to have the same denominator in order to subtract them. In the above example, you would need to change $1/4$ to $2/8$ by multiplying both the numerator and the denominator by 2. Now, you can work $7/8 - 2/8$. The denominators stay the same which is 8. Then you subtract the numerators ($7-2$), which is 5. So, the answer to subtracting the fractions is $5/8$. 3. Next, subtract the whole numbers. In the above example, it is $4-2$, which equals 2. 4. The answer to subtracting mixed fractions in the above example is $2\frac{5}{8}$. When you work on subtracting mixed fractions with regrouping, it is a similar process to subtracting whole numbers with regrouping. You know when you subtract whole numbers (two digits or more), you start with the ones place. Sometimes, you have to regroup or borrow from the tens place in order to work the problem. For example, $25-18=7$, you would have to regroup to work the problem. The same is true when subtracting mixed fractions if the fraction with the greatest whole number does not have the greatest fraction in value. For example, look at this problem: $6\frac{1}{2} - 3\frac{5}{8} =$ The fraction with the greatest whole number is $1/2$, which is smaller in value than $5/8$. However, you still have to work the problem $1/2 - 5/8$, just like you would if you started with the ones place in the above example problem of $25-18$ ($5-8$). In order to work this problem correctly, you have to regroup or borrow. When subtracting mixed numbers with regrouping, how do you borrow to subtract the fractions? You have to borrow from the whole number. Here's what you do: 1. Start with the fractions: $1/2 - 5/8$. 2. Make sure both denominators are the same. If they are not the same, then you need to multiply the numerator and denominator to create an equivalent fraction. In this example, you would multiply $1/2$ by 4 and get $4/8$. Now, both the denominators are the same. 3. The new problem to subtract is $4/8 - 5/8$. You still need to regroup in order to work this subtraction problem. 4. You have to borrow from the whole number. Remember that $1 = 8/8$. So, in this example, you are going to borrow 1 or $8/8$ from the 6. Now you have $5\frac{8}{8}$ $4/8$. Combine the $8/8$ and $4/8$, and you get $12/8$. 5. Now you can work the fraction subtraction problem $12/8 - 5/8 = 7/8$. 6. Next you subtract the whole numbers. Remember, you borrowed 1 from the largest whole number, so your problem is now $5 - 3 = 2$. 7. Your answer is $2\frac{7}{8}$. Those are the steps for subtracting mixed fractions with regrouping. Whether mixed numbers have the same denominators or different denominators, subtracting them is a lot like subtracting whole numbers: you stack them up one on top of the other, draw a line, and subtract. For this reason, some students feel more comfortable subtracting mixed numbers than subtracting fractions. Find the difference of the fractional parts. Find the difference of the two whole number parts. Along the way, though, you may encounter a couple more twists and turns. The following instructions will keep you on track so that you can do any mixed-number subtraction problem. Subtract mixed numbers with the same denominators Subtraction is much easier when the denominators are the same. For example, suppose you want to subtract $7\frac{3}{5} - 3\frac{1}{5}$. Here's what the problem looks like in column form: In this problem, you subtract $3/5 - 1/5 = 2/5$. Then you subtract $7 - 3 = 4$. Not too terrible, agreed? One complication arises when you try to subtract a larger fractional part from a smaller one. Suppose you want to find $11\frac{1}{6} - 2\frac{5}{6}$. This time, if you try to subtract the fractions, you get Obviously, you don't want to end up with a negative number in your answer. You can handle this problem by borrowing from the column to the left. This idea is very similar to the borrowing that you use in regular subtraction, with one key difference. When borrowing in mixed-number subtraction, Borrow 1 from the whole-number portion and add it to the fractional portion, turning the fraction into a mixed number. To find $11\frac{1}{6} - 2\frac{5}{6}$, borrow 1 from the 11 and add it to $1/6$, making it the mixed number $1\frac{1}{6}$: Change this new mixed number into an improper fraction. Here's what you get when you change $1\frac{1}{6}$ into an improper fraction: The result is $10/6$. This answer is a weird cross between a mixed number and an improper fraction, but it's what you need to handle the job. Use the result in your subtraction. In this case, you have to reduce the fractional part of the answer: Subtract mixed numbers with different denominators Subtracting mixed numbers when the denominators are different is just about the hairiest thing you've ever going to have to do in pre-algebra. Suppose you want to subtract $15\frac{4}{11} - 12\frac{3}{7}$. Because the denominators are different, subtracting the fractions becomes more difficult. But you have another question to think about: In this problem, do you need to borrow? If $4/11$ is greater than $3/7$, you don't have to borrow. But if $4/11$ is less than $3/7$, you do. Because 28 is less than 33 , $4/11$ is less than $3/7$, so you do have to borrow. Get the borrowing out of the way first: Now the problem looks like this: The first step, subtracting the fractions, is going to be the most time-consuming, so you can take care of that on the side: The good news is that this fraction can't be reduced. (They can't be reduced because 72 and 77 have no common factors: $72 = 2 \cdot 2 \cdot 2 \cdot 3$, and $77 = 7 \cdot 11$.) So the hard part of the problem is done, and the rest follows easily: This problem is about as difficult as a mixed-number subtraction problem gets. Take a look over it step by step. Or better yet, copy the problem and then try to work through the steps on your own. If you get stuck, that's okay. Better now than on an exam! A mixed number has a whole number and a fraction. A fraction is a number that is less than whole and that has a denominator underneath a numerator. To add or subtract mixed numbers, add or subtract the fractions, then add or subtract the whole numbers. If the fraction portion of a mixed number, such as $2\frac{5}{6}$, is more than the fraction portion of the mixed number you're trying to subtract from, such as $3\frac{1}{6}$, you must "borrow" from the whole number of the mixed number you're trying to subtract from to make its fraction bigger. "Borrow" 1 from the whole number 4 in the first mixed number in the equation $4\frac{1}{4} - 2\frac{3}{4}$ by subtracting 1 from 4. This leaves 3 as the whole number in the first mixed number in the equation. Convert the 1 you subtracted from 4 into a fraction with a denominator of 4. This equals $4/4$. Add $4/4$ to the fraction of the first mixed number: $4/4$ plus $1/4$ equals $5/4$. The equation now equals $3\frac{5}{4} - 2\frac{3}{4}$. Subtract the fraction portions of the mixed numbers: $5/4$ minus $3/4$ equals $2/4$. Subtract the whole numbers: 3 minus 2 equals 1. This leaves $1\frac{2}{4}$. Find the largest number that divides evenly into the numerator 2 and denominator 4 to reduce the fraction $2/4$ to its lowest terms. The largest divisible number is 2. Divide both the numerator and denominator by 2: 2 divided by 2 equals 1, and 4 divided by 2 equals 2. This leaves $1\frac{1}{2}$ reduced to its lowest terms. Keythman, Bryan. "How To Borrow When Adding & Subtracting Fractions" sciencing.com. , 24 April 2017. APA Keythman, Bryan. (2017, April 24). How To Borrow When Adding & Subtracting Fractions. sciencing.com. Retrieved from Chicago Keythman, Bryan. How To Borrow When Adding & Subtracting Fractions last modified March 24, 2022.