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How to write an improper fraction

View our privacy policy and terms & conditions   Divide the numerator by the denominator. For Example : Convert `5/4` to mixed Number   Use the quotient as the whole number. in our example quotient is 1.   Use the remainder as the numerator of the proper fraction. in our example remainder is 1.   The denominator will stay the same. in our example denominator is 4. Hence the required mixed number is `1 1/4`   Multiply the whole number by the denominator. For Example : Convert `2 1/4` to improper fraction In our example whole number is 2 and denominator is 4 hence 2 x 4 = 8   Add the product to the numerator of the proper fraction. The sum is the numerator of the improper fraction. Here numerator is 1 adding numerator and product we get, numerator= 8 + 1= 9   The denominator will stay the same. denominator = 4 Hence the improper fraction is `9/4` Example 1: A school bell rings every half-hour. If it just rang, then how many times will it ring in in the next three and one-half hours? Analysis: This problem is asking: How many halves are in three and one-half? Step 1: Let's use shapes to represent the mixed number three and one-half. Step 2: Solution: In example 1, we used shapes to help us solve the problem. Let's look at example 2. Example 2: A school bell rings every half-hour. If it just rang, then how many times will it ring in in the next nine and one-half hours? Analysis: Using shapes to solve this problem would not be practical. We need to find another method. Recall that a mixed number consists of a whole-number part and a fractional part. For example: Procedure: To write a mixed number as an improper fraction: Write the whole number part as an improper fraction, using the denominator from the fractional part. Add the result from step 1 to the fractional part of the mixed number. Let's use the procedure above to solve the problem from example 2. Example 2: A school bell rings every half-hour. If it just rang, then how many times will it ring in in the next nine and one-half hours? Analysis: Step 1: Step 2: Solution: The school bell will ring 19 times in the next nine and one-half hours. Let's look at some more examples of writing a mixed number as an improper fraction. Example 3: Write two and three-fourths as an improper fraction. Analysis: Step 1: Step 2: Solution: Example 4: Write six and two-thirds as an improper fraction. Analysis: Step 1: Step 2: Here is a summary of examples 1 to 4. Do you see a pattern? Do you see an easier way to write a mixed number as an improper fraction? Examples 1 to 4 There is a shortcut we can take for writing a mixed number as an improper fraction: If you multiply the denominator by the whole-number part, then add the numerator, the result gives you the numerator of the improper fraction. This is shown below for the mixed number two and three-fourths. Recapping examples 1 to 4, we get: Mixed Number Converted to an Improper Fraction Let's look at some more examples of writing a mixed number as an improper fraction using this shortcut. Example 5: Write eleven and one-fifths as an improper fraction. Analysis: Step 1: Solution: Example 6: Write fourteen and one-third as an improper fraction. Analysis: Step 1: Solution: This shortcut uses only one step, and makes it easier to convert large mixed numbers into improper fractions. Summary: There are several methods for converting a mixed number to an improper fraction. Use the one that is appropriate for the given problem. Exercises In Exercises 1 through 5, click once in an ANSWER BOX and type in your answer; then click ENTER. After you click ENTER, a message will appear in the RESULTS BOX to indicate whether your answer is correct or incorrect. To start over, click CLEAR. Note: To write the improper fraction five-thirds, enter 5/3 into the form. 1. Write one and three-fourths as an improper fraction.   2. Write four and one-fifth as an improper fraction.   3. Write five and seven-eighths as an improper fraction.   4. Write fifteen and two-thirds as an improper fraction.   5. A recipe calls for two and three-fourths cups of milk. If the measuring cup holds only one-fourth cup, then how many times will you have to fill it?   74 (seven-fourths or seven-quarters) An Improper Fraction has a top number larger than (or equal to) the bottom number. It is usually "top-heavy" See how the top number is bigger than (or equal to) the bottom number? That makes it an Improper Fraction, (but there is nothing wrong about Improper Fractions). Three Types of Fractions There are three types of fraction: Fractions A Fraction (such as 7/4) has two numbers: NumeratorDenominator The top number (the Numerator) is the number of parts we have. The bottom number (the Denominator) is the number of parts the whole is divided into. Example: 7/4 means: We have 7 parts Each part is a quarter (1/4) of a whole So we can define the three types of fractions like this: Proper Fractions: The numerator is less than the denominator Examples: 1/3, 3/4, 2/7   Improper Fractions: The numerator is greater than (or equal to) the denominator Examples: 4/3, 11/4, 7/7   Mixed Fractions: A whole number and proper fraction together Examples: 1 1/3, 2 1/4, 16 2/5 Improper Fraction So an improper fraction is a fraction where the top number (numerator) is greater than or equal to the bottom number (denominator): it is top-heavy. 44 Can be Equal What about when the numerator is equal to the denominator? For example 4/4 ? Well it is the same as a whole, but it is written as a fraction, so most people agree it is a type of improper fraction. Improper Fractions or Mixed Fractions We can use either an improper fraction or a mixed fraction to show the same amount. For example 134 = 74, as shown here: 134 74 = Converting Improper Fractions to Mixed Fractions To convert an improper fraction to a mixed fraction, follow these steps: Divide the numerator by the denominator. Write down the whole number answer Then write down any remainder above the denominator.   Divide: 11 ÷ 4 = 2 with a remainder of 3 Write down the 2 and then write down the remainder (3) above the denominator (4). Answer: 2 34 That example can be written like this: Answer: 3 13 Converting Mixed Fractions to Improper Fractions To convert a mixed fraction to an improper fraction, follow these steps: Multiply the whole number part by the fraction's denominator. Add that to the numerator Then write the result on top of the denominator.   Multiply the whole number part by the denominator: 3 × 5 = 15 Add that to the numerator: 15 + 2 = 17 Then write that result above the denominator: 175 We can do the numerator in one go: Are Improper Fractions Bad ? NO, they aren't bad! For mathematics they are actually better than mixed fractions. Because mixed fractions can be confusing when we write them in a formula: should the two parts be added or multiplied? Mixed Fraction: What is: 1 + 214 ?   Is it: 1 + 2 + 14 = 314 ?   Or is it: 1 + 2 × 14 = 112 ?   Improper Fraction: What is: 1 + 94 ?   It is: 44 + 94 = 134 But, for everyday use, people understand mixed fractions better. Example: It is easier to say "I ate 214 sausages", than "I ate 94 sausages" We Recommend: For Mathematics: Improper Fractions For Everyday Use: Mixed Fractions Copyright © 2017 MathsIsFun.com Related Topics: More Lessons for Grade 4 Math Worksheets Example, solutions, videos, and songs to help Grade 4 students learn about Improper Fractions. What is an improper fraction? An improper fraction is a fraction whose numerator is greater than the denominator. The following diagram shows an example of improper fraction. Scroll down the page for more examples and solutions on how to convert between improper fraction and mixed number. Improper Fractions & Mixed Numbers What's an improper fraction? How to convert between improper fraction and mixed number? Show Step-by-step Solutions Proper fractions, improper fractions, and mixed numbers Learn how to convert improper fractions to and from mixed numbers Improper fraction Song Show Step-by-step Solutions Proper Fraction, Improper Fraction and Mixed Song song Show Step-by-step Solutions Try the free Mathway calculator and problem solver below to practice various math topics. Try the given examples, or type in your own problem and check your answer with the step-by-step explanations. We welcome your feedback, comments and questions about this site or page. Please submit your feedback or enquiries via our Feedback page. If you have a big pizza party and half an anchovy pizza left over afterward, you would say that you have "one and a half" pizzas. "One and a half" is the standard spoken-English way of expressing this number, and it is written as "11/2". This symbol, "11/2", is called a "mixed number", because it combines the "regular" number "1" with the fraction "1/2". While mixed numbers are the natural choice for spoken English (and are therefore well-suited to the answers of word problems), they aren't generally the easiest fractions to compute with. In algebra, you will almost always prefer that your fractions not be mixed numbers. Improper Fractions and Mixed Numbers Instead, you will use so-called "improper" fractions (also sometimes called "vulgar" fractions), being fractions where the top number is bigger than the bottom number. The standard way to convert a mixed number to an improper fraction is to multiply the bottom number by the "regular" number, add in the top number, and then put this on top of the original bottom number as a new fraction. For instance, to convert 11/2 to an improper fraction, you do the following: I multiplied the bottom 2 by the "regular" 1, and then added in the 1 from on top, getting 3. Then I put this 3 on top of the 2 from underneath. To do the conversion, I'll multiply the denominator (the 16) by the whole number (the 2) to get 32. Then I'll add the numerator (the 3) to 32 to get the new numerator (35). The denominator will remain the same; namely, 16. To do the conversion, I'll multiply the denominator (the 5) by the whole number (the 6) to get 30. Then I'll add the numerator (the 2) to 30 to get the new numerator (32). The denominator will remain the same; namely, 5. You can use the Mathway widget below to practice converting a percentage to a decimal. Try the entered exercise, or type in your own exercise. Then click the button to compare your answer to Mathway's. (Or skip the widget and continue with the lesson.) Please accept "preferences" cookies in order to enable this widget. (Click here to be taken directly to the Mathway site, if you'd like to check out their software or get further info.) To go from an improper fraction to a mixed number, you remember that "fractions are division", and you apply long division to find a whole-number quotient, plus a remainder. In other words, you divide the top number by the bottom number. Whatever you get on top of the division symbol is the quotient, and is your "regular" part of the mixed number. Whatever your remainder is, put that number on top of the number you divided by; this is the fractional portion of your mixed number. Note: When you're converting from improper fraction to mixed numbers, do not continue the long division into decimal places. Just find the quotient and the remainder. Then stop. First, I do the long division to find the whole-number part (being the quotient) and the remainder: The quotient, across the top, is 11, so this will be the whole-number portion of the mixed number. Since the remainder is 1 and I'm dividing by 4, the fractional part will be 1/4. You can use the Mathway widget below to practice converting an improper fraction to a mixed number. Try the entered exercise, or type in your own exercise. Then click the button to compare your answer to Mathway's. (Or skip the widget and continue with the lesson.) Please accept "preferences" cookies in order to enable this widget. (Clicking on "Tap to view steps" on the widget's answer screen will take you to the Mathway site for a paid upgrade.) This procedure works perfectly well on rational expressions (polynomial fractions). You can see this in the example below (or else you can jump on ahead to multiplying regular fractions): First, do the long division to find the regular polynomial part and the remainder: The polynomial on top is "x + 1" and the remainder is –1. Since you're dividing by "x + 2", the fractional part will be "(–1)/(x + 2)": URL: Page 1Page 3Page 4Page 5 In today's post we're going to learn about mixed numbers, which are much easier to interpret than the improper fractions they represent. We're going to look at some examples of the exercises and problems that you can work on in Smartick and the types of numbers that you can work on in these activities. You'll be able to do them almost without thinking! Improper fractions as a mixed number Remember that a mixed number is a numerical way of representing a fraction greater than a unit (improper fraction), or in other words, to represent fractions in which the numerator is greater than the denominator. Let's start with an example: If you look at the improper fraction 67/13, it might not be easy to visualize the number that it represents, since it is greater than the unit (because the numerator is greater than the denominator, 67 > 13). But if you convert it into a mixed number, you can understand the number it represents much more easily. To do this, the first thing you need to do is divide the numerator of the fraction by the denominator, to find out how many whole units the number contains. Since 65 = 13 x 5, we can separate the 67 into 65 and 2, and one of the parts will be divisible by 13 and the other won't: Now, it's really easy to write the mixed number: first we write the whole number and then the fraction that's smaller than the unit: Using this representation it's easy to see that the number is made up of 5 whole units and 2 thirteenths of another unit. Now we're going to look at some examples of the exercises and problems involving mixed numbers that you can work on in Smartick. Example 1: Mixed numbers exercise In the first type of exercise, we can practice writing the mixed number from its representation with pie charts. As you can see, this example shows a completely colored circle, and 1 equal part out of 4 of another circle colored. Therefore, it's easy to see that the number represented graphically is 11/4: Example 2: Mixed numbers exercise In the second type of exercise we're going to use pictures to help us practice converting an improper fraction into a mixed number. As you can see in the example, we have 2 whole pizzas and three-fourths of another pizza. You can easily see that 11/4 of pizza is 2 whole pizzas and 3/4 of another pizza. In other words, the mixed number that corresponds to the improper fraction 11/4 is 23/4. This way it's much easier to interpret, isn't it? Example 3: Mixed numbers exercise In the third type of exercise, we practice writing improper fractions and mixed numbers by representing them with circular charts. In the example, you can see 2 complete circles and 2 equal parts out of 3 of another. When the mixed number being represented is 22/3 and the improper fraction being represented is 8/3: Example 4: Mixed numbers word problem Finally, let's look at an example from Smartick in which we work with mixed numbers to solve problems. Let's calculate the number of laps Albie has to run around his planet. Since he has to run 12 more laps than Alan, and Alan has to run 9/10 of a lap, all we need to do is add 12 and 9/10. Representing the result as a mixed number is really easy because you don't even have to do anything to add 12 and 9/10, you just need to write the whole number followed by the fraction: 129/10. Therefore we can say that Albie has to run 129/10 laps around his planet. And that's all for today! What do you think of this post? It's really quick and easy to solve these exercises using mixed numbers, isn't it? If you want to keep learning and practicing more primary mathematics, log in to Smartick and try our learning method for free. Learn More: Types of Fractions: Proper, Improper, Fractions Equal to One Practice Estimating Fractions with Examples Understanding Fractions: "If the Whole Is Made of 8 Parts, How Can I Have 11?" Using Lego Blocks to Help with Addition of Fractions Using the Number Line to Compare Fractions