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Get a Widget for this Calculator Do long division with decimal numbers and see the work for the calculation step-by-step. Enter positive or negative decimal numbers for divisor and dividend and calculate a quotient answer. How to Do Long Division with Decimals If the number you're dividing by has a decimal, move the decimal point all the way to the right counting the number of places you've moved it to. Then move the decimal point in the number you're dividing the same number of places to the right. Insert a decimal point in the quotient (answer) space, exactly above the decimal point in the number under the division bar. Divide until the remainder is zero, or until you have enough decimal places in your answer. You can also stop if the remainder repeats because this indicates that your answer is a repeating decimal. Calculate Decimal Places for a Quotient Answer How far do you want to calculate the decimal places for the answer? Here are some examples: 31 divided by 16 = 1.937500 calculating to 6 decimal places 31 divided by 16 = 1.937 calculating to 3 decimal places 22 divided by 15 = 1.466666666 calculating 9 decimal places 22 divided by 15 = 1.466666 calculating 6 decimal places 22 divided by 15 = 1.466 calculating to 3 decimal places Note that this is not the same as rounding to a specific number of decimal places. For example, 22 divided by 15 = 1.466 when calculated to 3 decimal places because you stop once you reach the third decimal place. On the other hand, 22 divided by 15 = 1.467 when rounded to 3 decimal places. In order to round to the third decimal place you must calculate to at least the fourth decimal place so that you know how to round the third decimal place. See our Rounding Numbers Calculator for more information. Also see our Long Division with Remainders to see the work for long division with remainders. Parts of Division For the division problem 471 divided by 32: 471 is the dividend 32 is the divisor 14.718 is the quotient calculated out to 3 decimal places How to do Long Division with Decimals: Example In this problem we divide 4.71 by 3.2 out to 3 decimal places in the quotient answer. Set up the problem with the long division bracket. Put the dividend inside the bracket and the divisor on the outside to the left. If the divisor is a decimal number, move the decimal all the way to the right. Count the number of places and move the decimal in the dividend the same number of places. Add zeroes if needed. Since 3.2 is not a whole number move the decimal point one place to the right. 32 is a whole number. Do the same to the dividend and move the decimal one place to the right. Since we are solving to 3 decimal places, add two trailing zeroes to the dividend. Insert a decimal point above the division bar, directly above the new decimal position in the dividend. Divide the left most number of the dividend by the divisor, in this case divide 4 by 32. Since 4 divided by 32 is not a whole number, the first quotient digit is 0. Multiply the divisor 32 by the quotient 0 to get the product 0. Subtract 0 from 4 to get the remainder 4. Next, bring down the 7 from the dividend so you have 47. What is 47 divided by 32? Or in other words, how many times does 32 go into 47? Just once, with a remainder. Insert 1 in the quotient. To find the remainder, multiply the divisor by 1 and subtract the product 32 from the second dividend 47. The remainder is 15. Again, bring down the next digit from the dividend, 1, and place it at the end of the remainder. Repeat the steps. What is 151 divided by 32? Or, how many times does 32 go into 151? 32 goes into 151 four times. Put a 4 in the next place in the quotient and multiply 32 by 4 to get 128. Subtract that product from 151 to find a remainder of 23. Bring down the 0 from the dividend and insert it after 23 to get 230. What is 230 divided by 32? 32 goes into 230 seven times. Put a 7 in the next place in the quotient. 32 times 7 is 224. 230 minus 224 leaves a remainder of 6. Now bring down the next zero from the dividend and repeat the steps. 32 goes into 60 only once. Put a 1 in the next place in the quotient. 32 multiplied by 1 is 32. Subtracting 32 from 60 leaves a remainder of 28. Wikipedia: Long Division Last updated: October 19, 2023 Steps for dividing whole number by decimal: Simultaneously move decimal point to the right in both numbers, until you get whole number, instead of a decimal. Now, you have two whole numbers. Divide them, using long division, except that you need to continue division, until you get zero remainder. Why this works? Because, we actually use equivalence of fractions here. Suppose, you need to divide $$${25}\div{0.08}$$$. This can be written as fraction $$$\frac{{25}}{{0.08}}$$$. We then multiply numerator and denominator by 10, which is equivalent to moving decimal point 1 position to the right: $$$\frac{{25}}{{0.08}}=\frac{{{25}\cdot{\color{red}{{{10}}}}}}{{{0.08}\cdot{\color{red}{{{10}}}}}}=\frac{{250}}{{0.8}}$$$. We still didn't obtain whole number in denominator, so continue moving: $$$\frac{{{250}\cdot{\color{red}{{{10}}}}}}{{{0.8}\cdot{\color{red}{{{10}}}}}}=\frac{{2500}}{{8}}$$$. Now, we can perform division. Note, that you can speed up this process, by noting, that $$${0.08}$$$ has two decimal places. This means, that you can right away multiply numerator and denominator by $$${{10}}^{{2}}={100}$$$. Also, when we divided whole numbers, we left non-zero remainder. That's because we didn't know about decimals. But now, you should continue dividing, until you get zero remainder. Example 1. Calculate $$${25}\div{0.08}$$$. We've already made preparations, so now we divide 2500 by 8: $$$\begin{array}{r}\color{blue}{3}\color{green}{1}\color{orange}{2}\\8\hspace{1pt})\overline{\hspace{1pt}2500}\\-\underline{\color{blue}{24}}\\10\\-\hspace{1pt}\underline{\color{green}{8}}\\20\\-\underline{\color{orange}{16}}\\4\\\end{array}$$$ Now, there is non-zero remainder, but we need to continue. For this, add decimal and required number of zeros after it. $$$\begin{array}{r}\color{blue}{3}\color{green}{1}\color{orange}{2}\huge{\color{red}{.}}\large{\color{magenta}{5}}\\8\hspace{1pt})\overline{\hspace{1pt}2500\huge{\color{red}{.}}\large{\color{brown}{0}}}\\-\underline{\color{blue}{24}}\phantom{\huge{.}\large{0}}\\10\phantom{\huge{.}\large{0}}\\-\hspace{1pt}\underline{\color{green}{8}}\phantom{\huge{.}\large{0}}\\20\phantom{\huge{.}\large{0}}\\-\underline{\color{orange}{16}}\phantom{\huge{.}\large{0}}\\4\phantom{\huge{.}\large{0}}\\-\underline{\color{magenta}{4\phantom{\huge{.}}\large{0}}}\\\color{cyan}{0}\\\end{array}$$$ Note, that we've added one zero in order to complete division, but in general, you, probably, need to add more than one zero. So, $$${\color{purple}{{{25}\div{0.08}={312.5}}}}$$$. There can be a situation, when you've prepared numbers for division, but dividend is less than divisor. That's not a problem. Move decimal point in the dividend only, until you get the number, greater than divisor. Perform division and then undo moving, i.e. move decimal point to the left. Example 2. Calculate $$${8}\div{12.5}$$$. First, simultaneously move decimal point one position to the right: $$${80}\div{125}$$$. Dividend is less than divisor, so move decimal point to the right: $$${80.0}{\color{blue}{{\to}}}{800.0}$$$ (we moved point 1 time). Now we can divide 800 by 125. Answer is 6.4. And now, don't forget, that we moved decimal point in dividend 1 position to the right, so need to undo it. Move decimal point 1 position to the left: $$${6.4}{\color{blue}{{\to}}}{0.64}$$$. So, $$${\color{purple}{{{8}\div{12.5}={0.64}}}}$$$. Now, it is your turn. Take pen and paper and solve following problems: Exercise 1. Find $$${8}\div{0.25}$$$. Answer: 32. Exercise 2. Calculate $$${48}\div{38.4}$$$. Answer: 1.25. Exercise 3. Find $$$-{2}\div{6.4}$$$. Answer: -0.3125. Exercise 4. Find $$$-{48}\div{\left(-{0.3}\right)}$$$. Answer: 160. Exercise 5. Find $$${2}\div{5.12}$$$. Answer: 0.390625. Get a Widget for this Calculator Do long division with decimal numbers and see the work for the calculation step-by-step. Enter positive or negative decimal numbers for divisor and dividend and calculate a quotient answer. How to Do Long Division with Decimals If the number you're dividing by has a decimal, move the decimal point all the way to the right counting the number of places you've moved it to. Then move the decimal point in the number you're dividing the same number of places to the right. Insert a decimal point in the quotient (answer) space, exactly above the decimal point in the number under the division bar. Divide until the remainder is zero, or until you have enough decimal places in your answer. You can also stop if the remainder repeats because this indicates that your answer is a repeating decimal. 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Subtract that product from 151 to find a remainder of 23. Bring down the 0 from the dividend and insert it after 23 to get 230. What is 230 divided by 32? 32 goes into 230 seven times. Put a 7 in the next place in the quotient. 32 times 7 is 224. 230 minus 224 leaves a remainder of 6. Now bring down the next zero from the dividend and repeat the steps. 32 goes into 60 only once. Put a 1 in the next place in the quotient. 32 multiplied by 1 is 32. Subtracting 32 from 60 leaves a remainder of 28. Wikipedia: Long Division Last updated: October 19, 2023 Our grade 5 decimal division worksheets start with simple "mental math" questions emphasizing the understanding of decimal place value and finish with more challenging decimal long division exercises. Find all of our decimals worksheets, from converting fractions to decimals to long division of multi-digit decimal numbers. Get a Widget for this Calculator Do long division with decimal numbers and see the work for the calculation step-by-step. Enter positive or negative decimal numbers for divisor and dividend and calculate a quotient answer. How to Do Long Division with Decimals If the number you're dividing by has a decimal, move the decimal point all the way to the right counting the number of places you've moved it to. Then move the decimal point in the number you're dividing the same number of places to the right. Insert a decimal point in the quotient (answer) space, exactly above the decimal point in the number under the division bar. Divide until the remainder is zero, or until you have enough decimal places in your answer. You can also stop if the remainder repeats because this indicates that your answer is a repeating decimal. Calculate Decimal Places for a Quotient Answer How far do you want to calculate the decimal places for the answer? 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Wikipedia: Long Division Last updated: October 19, 2023 Free Step-by-Step Guide: Dividing Decimals Explained in 3 Easy Steps In math, it is important to be able to work with and perform operations on decimals, which are numbers in the base-10 system that include a point that separates the whole number(s) from the attached fractional parts. For example, the number 2.5 is a decimal number that represents two and a half.One of the more challenging operations to perform with decimals is division. However, if you know how to divide whole numbers, then you can easily learn how to divide decimals using just a few simple steps. Note that there are two different cases when it comes to dividing decimals: a decimal divided by a whole number and a decimal divided by another decimal. We will cover both cases in this guide.Below are quick links to each section of this free Step-by-Step Guide on How to Divide Decimals:While learning how to divide with decimals can be intimidating at first, it is a math skill that you can easily learn with practice following a simple 3-step process. This free dividing with decimals tutorial will teach you everything you need to know about how to divide with decimals, including several step-by-step practice problems for both dividing decimals by whole numbers and dividing decimals by decimals.But, before we dive into our practice problems, let’s do a quick recap of some important vocabulary terms related to division as well as a quick review of how to perform long division. If you are already comfortable with the review information, you can use the quick links above to skip ahead to the section that best meets your needs. Figure 01: How to Divide Decimals: Key Vocabulary In this guide on dividing decimals, we will be using the terms dividend and divisor often, so make sure that you are familiar with what they mean:When dividing two numbers, the dividend is the number that is being divided.When dividing two numbers, the divisor is the number of parts the dividend is being divided into. For example, consider the division problem: 248 ÷ 8248 is the dividend because it is the number being divided8 is the divisor because 248 is being divided into 8 parts.This example is illustrated in Figure 01 above.Because this guide will be teaching you how to divide decimals without using a calculator, we will be using long division to solve problems. Therefore, it is important that you are familiar with the divisor/dividend notation shown in Figure 01 above, where: 248 ÷ 8 → 8 | 248Now that you know how to identify a dividend and a divisor and the divisor/dividend notation, lets do a quick review of how to perform long division using the same example of 248 ÷ 8. Figure 02: Dividing Decimals Explained: Long Division Review Figure 02 above shows a step-by-step review of how to use long division to determine that 248 ÷ 8 = 31.If you are not comfortable with performing long division, then we recommend that you pause now and do a deeper review before moving forward with this tutorial on how to divide decimals. The first set of examples in this dividing decimals tutorial will focus on how to divide decimals by whole numbers and will include examples for when the dividend is the whole number and when the divisor is the whole number as well.How to Divide Decimals by Whole Numbers Example #1: 1.5 ÷ 2Let’s start off with a simple example that you could probably solve without the use of long division (although we will solve it using long division anyway so that you can start to become more familiar with our 3-step process for dividing decimals).For this example, and all of the examples that follow, you will be using the following three step method for dividing decimals:Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).Step Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.Step Three: Use long division to solve.We will be applying this 3-step process of all of the dividing decimals practice problems in this guide, so don’t get intimidated if you are a little confused right now. The process will make more sense and be easier to apply after we work through a few examples. Figure 03: How to Divide Decimals: First, identify whether or not the divisor is a whole number. Lets start with the first step:Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).In the case of 1.5 ÷ 22 is the divisor1.5 is the dividendAs shown in Figure 03 above, it is clear that the divisor is 2, which is indeed a whole number, so, for this example, we can skip the second step and move right onto Step Three.Also notice that in Figure 03 above, we rewrote 1.5 as 1.50 (they both mean the same thing). Adding extra zeros after the last digit of a decimal does not change the number and often helps you to perform long division, as you will see in the next step.Step Three: Use long division to solve.All that you have to do now is use long division to solve the problem. You can click play on the video below to see an animated step-by-step breakdown of how to perform the long division for this problem. Based on the video and the illustrated summary shown in Figure 04 below, you can see that: Solution: 1.50 ÷ 2 = 0.75This solution should make sense because dividing 1.50 in half will result in 0.75. Before moving onto another similar example of a decimal divided by a whole number, we encourage you to review the above review as we will not include videos for every example. Figure 04: How to Divide Decimals by Whole Numbers: Example #1 Solved For this next example, we will be using the exact same three-step approach as Example #1.Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).For this example:3 is the divisor24.36 is the dividendSince the divisor in this example is a whole number (3), we can skip the second step just like we did in the previous example and move onto the third and final step.Step Three: Use long division to solve.To solve the second example, perform long division just as you did to solve Example #1. Remember to follow your steps carefully and to line up your decimal points.The entire process of using long division to solve 24.36 ÷ 3 is illustrated in Figure 05 below. Figure 05: Dividing decimals by whole numbers explained. After completing Step Three, we can conclude that:Solution: 24.36 ÷ 3 = 8.12Now, lets look at a few examples of a decimal divided by a whole number where the divisor is not a whole number. For this third example of dividing decimals by whole numbers, we will again be using the same three-step method as the previous two examples (as well as all on the examples that will follow this one), except that this time we will not be able to skip the second step.Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).In this case:2.3 is the divisor92 is the dividendSince the divisor in this example is 2.3, which is not a whole number, we will have to move onto the second step (which we were able to skip in the previous two examples).Step Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.When it comes to dividing decimals, we cannot have a decimal as a divisor. However, we can multiply both the divisor and the dividend by the same multiple of ten to transform the divisor into a whole number and still have a proportional relationship.Since the final digit of 2.3 is in the tenths place value slot, we will multiply both the divisor (2.3) and the dividend (92) by 10 as shown below and in Figure 06:2.3 x 10 = 2392 x 10 = 920*Remember that what you do to one number, you must do to the other number. If you forget to multiply both the dividend and the divisor by 10, you will get the wrong answer. Figure 06: How to Divide Decimals by Whole Numbers: The divisor has to be a whole number. Step Three: Use long division to solve.After completing Step Two, all we have to do is use long division to solve 920 ÷ 23.The step-by-step process for using long division to divide 920 by 23 is shown in Figure 07 below. Figure 07: Decimal divided by a whole number Finally, we can say that:Solution: 92 ÷ 2.3 = 40Next, lets look at one final example of how to divide decimals by whole numbers before we move onto learn all about dividing decimals by decimals.How to Divide Decimals by Whole Numbers Example #4: 16 ÷ 6.25Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).For the fourth example, the divisor is a decimal and the dividend is a whole number.6.25 is the divisor16 is the dividendStep Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.Since the divisor is a decimal (6.25), we will have to multiply both the divisor and the dividend by the same multiple of ten.And since, in this example, the final digit of the divisor, 6.25, is in the hundredths place value slot, we will multiply both the divisor and the dividend by 100 as shown below and in Figure 08.6.25 x 100 = 62516 x 100 = 1,600 Figure 08: How do you divide decimals by whole numbers? After completing long division, we can conclude that:Solution: 16 ÷ 6.25 = 2.56Now we will move on from dividing decimals by whole numbers to learning how to divide decimals by decimals. This section of our guide focused on dividing decimals by decimals. If you used the quick links at the top of the page to skip to this section, we recommend working through the examples in the dividing decimals by whole numbers section above, because it will help you to better understand how to use the following three-step method for dividing decimals by decimals:Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).Step Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.Step Three: Use long division to solve.Just as the previous section on dividing decimals by whole numbers, we will be following the same steps for dividing decimals by decimals.Lets go ahead and dive into the first example. Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).For this first example:0.4 is the divisor7.68 is the dividendFor all of the examples in this section, we will be dividing decimals by decimals, so it will always be the case that the divisor is not a whole number. Therefore, you will always have to move onto Step Two, where you will use multiplication to transform the divisor into a whole number.Step Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.Again, a decimal divided by a decimal can not be solve using long division when the divisor is not a whole number. Luckily, you can easily transform the divisor into a whole number by multiplying both the divisor and the dividend by a multiple of ten and still have a proportional relationship where you can use long division to solve the problem.Since the final digit of 0.4 is in the tenths place value slot, you can multiply both the divisor (0.4) and the dividend (7.68) by 10 as shown below and as illustrated in Figure 09.0.4 x 10 = 47.68 x 10 = 76.8*Always remember that whenever you multiply the divisor by a multiple of 10, you also have to multiply the dividend by that same multiple of 10. If you forget to multiply both by the same multiple of 10, you will not be able to correctly solve the problem. Figure 09: How to Divide with Decimals: Use multiples of 10 to transform the divisor into a whole number. Step Three: Use long division to solve.Now that you have transformed the divisor into a whole number, you can use long division to solve the problem. You can click play on the video below to see an animated step-by-step breakdown of how to perform the long division for this problem. Based on the video and the illustrated summary shown in Figure 10 below, we can conclude that:Solution: 7.68 ÷ 0.4 = 19.2Before you continue onto the next example of how to divide decimals by decimals, we highly recommend that you review the step-by-step long division tutorial above as we will not include video tutorials for every problem. Figure 10: How to divide decimals by decimals. Just like the previous example, we will use our three step method to solve a decimal divided by a decimal problem.Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).For this first example:0.24 is the divisor38.4 is the dividendStep Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.Since the divisor, 0.24, is a decimal, you will have to multiply it (and the dividend) by a power of ten to make it a whole number. Since the last digit of 0.24 is in the hundredths place value slot, we will multiply both the divisor and the dividend by 100 as shown below and in Figure 11.0.24 x 100 = 2438.4 x 100 = 3,840 Figure 11: Solving a decimal divided by a decimal problems. Step Three: Use long division to solve.Finally, you now have a divisor that is a whole number, so you can simply use long division to solve 3,840 ÷ 24 to find the solution to this problem, as illustrated in Figure 12 below. Figure 12: How to Divide Decimals Step-by-Step Solution: 38.4 ÷ 0.24 = 160Now, lets work through one final example. Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).For this first example:1.36 is the divisor4.76 is the dividendStep Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.Since the divisor, 1.36, is a decimal, you will have to multiply it (and the dividend) by 100 to transform it into a whole number (we chose to multiply the dividend and the divisor by 100 because the last digit of 1.36 is in the hundredths decimal slot).1.36 x 100 = 1364.76 x 100 = 476Step Three: Use long division to solve.Now you can find the solution by using long division to solve 476 ÷ 136 as shown in Figure 13 below. Figure 13: Dividing decimals example #3 solution. Solution: 4.76 ÷ 1.36 = 3.5 Learning how to divide decimals by whole numbers or other decimals is an important math skill that every student will eventually have to learn how to do.While dividing decimals can seem challenging, as long as you know how to perform long division, you can easily solve dividing decimals problems by using the following 3-step approach:Step One: Identify the dividend and the divisor and determine whether or not the divisor is a whole number (if it is, move onto Step Three).Step Two: If the divisor is not a whole number, multiply it by a multiple of 10 to make it a whole number (multiply tenths by 10, hundredths by 100, thousandths by 1,000, etc.). Whatever multiple of 10 that you multiplied the divisor by, you must also multiply the dividend by.Step Three: Use long division to solve.By working through the examples in this guide as well as the practice problems on the free dividing decimals worksheet, you will gain invaluable practice and experience with dividing decimals, which will make solving problems where you have to divide decimals a simple and easy task. 1 Comment There are six sets of divide decimals worksheets. Divide Decimals by 10, 100, 1000 Divide Decimals by Powers of 10 (eg. 74.2 ÷ 103) Divide Whole Numbers to give Decimal Quotients Divide Decimals by Whole Numbers (without rounding) Divide Decimals by Whole Numbers (with rounding) Divide Decimals by Decimals (with & without rounding) Examples, solutions, videos, and worksheets to help Grade 5 students learn how to divide a whole number by whole number and get a decimal answer (quotient) by adding zeroes to the dividend. Include dividing decimals word problems. How to divide whole numbers with decimal answers? Set up the division problem: Write the whole number you want to divide as the dividend, and write the divisor outside the division bracket. Write a decimal point in the dividend and a zero in the tenths place of the dividend. Divide, you can add more zeros in the dividend and continue dividing, if necessary. Write the quotient, including the decimal point in the appropriate place. Have a look at this video if you need to review how to divide whole numbers by whole numbers with decimal quotients. Whole Number Division with Decimal Answers Click on the following worksheet to get a printable pdf document. Scroll down the page for more Divide Whole Numbers with Decimal Quotients Worksheets. There are three sets of divide whole numbers with decimal quotients worksheets: Division with 1 decimal place quotients. Division with 2 decimal place quotients. Division with 1 or 2 decimal place quotients.   More Divide Whole Numbers with Decimal Quotients Worksheets Printable (Answers on the second page.) There are three sets of divide whole numbers with decimal quotients worksheets. Divide Whole Numbers with Decimal Quotients Worksheet #1 (1 decimal place quotients) Divide Whole Numbers with Decimal Quotients Worksheet #2 (2 decimal place quotients) Divide Whole Numbers with Decimal Quotients Worksheet #3 (1 or 2 decimal place quotients) Online & Generated Divide Decimals by 10, 100, 1,000 Divide Decimals by Powers of 10 (Exponent Form) Divide Decimals by Multiples of 10 Divide by Whole Number, 1 dp ÷ 1 digit Divide by Whole Number, 2 dp ÷ 1 digit Divide by Whole Number, 3 dp ÷ 1 digit Divide Whole Numbers with Decimal Quotients Word Problems A rectangular field has an area of 23 square meters. If its length is 2 meters, what is the width of the field? John bought a 7-meter-long piece of fabric. He wants to cut it into 4 equal pieces. How long will be each piece? Lisa wants to distribute 6 kilograms of apples equally into 4 bags. What would be the weight of each bag? Dividing Decimals Lesson More Printable Worksheets 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. The Long Division Calculator with steps that we present here is an excellent tool for calculating long division with remainders and decimals. To use the Long division Calculator follow these steps: Enter the dividend into the calculator Then enter the divisor Select the "remainder" option to perform long division with remainder, or select the "decimal" option to perform long division with decimals. Keep in mind that to calculate a long division with a remainder, the divisor must be less than or equal to the dividend. Finally, press the "Calculate" button to get the solution. The long division method, also known as the standard algorithm, is an algorithm that allows us to divide any two numbers. This technique consists in performing sequentially small operations of division, multiplication and subtraction. The steps to do long division with remainders are presented below: The first step is to set up the division as shown in the following image: Determine the number of times the divisor fits into the leftmost digit of the dividend. Then we write that number on the line above the dividend. But if that number is zero, you must repeat this step but with the two leftmost digits of the dividend. Then multiply the divisor by the number you have placed on the line above the dividend and subtract the product from the leftmost digits of the dividend. Do the previous subtraction and put the answer below. Place the next digit of the dividend to the right of the result of the subtraction from the previous step. Repeat the previous steps until you get a remainder. This can be zero or be a number less than the divisor. Example of long division with remainders: 50÷15 This example was generated using the long division calculator with remainders. Long division with decimals To do long division with decimals, you must apply the following rules: If the decimal is only in the dividend, perform the steps of regular long division, ignoring the decimal point. Once you have your answer, move the decimal point directly up from the dividend to the quotient. If the decimal is in the divisor, or both the divisor and the dividend are decimals, move the decimal point in the divisor to the right to make it a whole number, and also move the decimal point in the dividend the same number of spaces to the right. Solve using regular long division. Example of long division with decimals: 500÷2.5 This example was generated using the long division with decimals. Welcome to our Division of Decimal Numbers Worksheets page. Here you will find our selection of decimal long division worksheets with decimals up to 3dp. We have long division decimal worksheets with decimals to 1dp, 2dp and 3dp. On this page we have some worked examples, and also some worksheets for dividing decimals by whole numbers. The long division worksheets involve solving problems involving decimals to 1dp, 2dp and 3dp. Long division is also a great way to convert fractions into decimals if you do not have a calculator. The sheets are graded so that the division problems start off easier, then get gradually harder. Using these decimal division worksheets will help your child to: use long division with decimal numbers to 1dp, 2dp and 3dp; The important thing to remember about using Long division with decimal numbers, is that the actual method is not really any different than just normal long division. The main thing to remember is that the decimal point has to be lined up. How to Divide decimal numbers Step 1) Write out the long division in standard form Step 2) Start the long division problem exactly as if it were a non-decimal problems. Step 3) Put the decimal point into the quotient (answer line) exactly above where it is in the dividend. Step 4) Bring the next digit down. Step 5) Continue until there is no remainder, or until you get repeated digits. Let's look at some examples... Example 1) Work out 37.6 ÷ 4. Step 1) Write out the long division in standard form. Step 2) We start the long division problem exactly as if it were a non-decimal problems. Step 3) Put the decimal point into the quotient (answer line) exactly above where it is in the dividend. Step 4) Bring the next digit down. Step 5) Continue until there is no remainder, or until you get repeated digits. This gives us a final answer of 9.4 Example 1) Work out 44.73 ÷ 7. Step 1) Write out in standard form. Step 2) Start the long division problem exactly as if it were a non-decimal problems. Step 3) Put the decimal point into the quotient (answer line) exactly above where it is in the dividend. Step 4) Bring the next digit down. Step 5) Continue until there is no remainder, or until you get repeated digits. This gives us a final answer of 6.39 Example 1) Work out 61 ÷ 8. Step 1) Write out in standard form. For this division problem, we are going to need 3 decimal places. If you don't know the number of decimal places you need, then you can add them as you go! Step 2) Start the long division problem exactly as if it were a non-decimal problems. Step 3) Put the decimal point into the quotient (answer line) exactly above where it is in the dividend. Step 4) Bring the next digit down. Step 5) Continue until there is no remainder, or until you get repeated digits. This gives us a final answer of 7.625 We have split the sheets into several sections: Long division with 1 decimal place Long division with 2 decimal places Long division with 3decimal places Mixed long division questions with up to 3 decimal places This short video walkthrough shows several problems from our Mixed Decimal Division up to 3dp Worksheet 1 being solved and has been produced by the West Explains Best math channel. If you would like some support in solving the problems on these sheets, please check out the video below! If you are looking for decimal division facts linked to the multiplication table, then we also have some worksheets for you. These sheets are all about using the multiplication table to work our decimal division facts like 1.2 ÷ 4, or 7.2 ÷ 9. We also have some 4th Grade Division related facts worksheets. This page focuses on working out division facts related to the multiplication table. We also have long division worksheets both with and without remainders. Take a look at some more of our worksheets similar to these. Here you will find a range of Free Printable 5th Grade Division Worksheets. The following worksheets involve using the 5th Grade Math skills of dividing, and solving division problems. Using these sheets will help your child learn to: divide any whole number up to 10000 by a two digit number; express any division with a remainder in the form of a mixed number (a number with a fraction part). The sheets in this section involve using parentheses and exponents in simple calculations. There are also lots of worksheets designed to practice and learn about PEMDAS. Using these worksheets will help your child to: know and understand how parentheses works; understand how exponents work in simple calculations. understand and use PEMDAS to solve a range of problems. PEMDAS Problems Worksheets 5th Grade 6th Grade Order of Operations Here you will find a range of free printable 5th Grade Fraction Worksheets. At 5th Grade level, children are introduced to adding and subtracting fractions with different denominators. They know and can use equivalent fractions, and can multiply a fraction by whole numbers, as well as adding mixed numbers. Using these sheets will help your child to: add and subtract fractions and mixed numbers; understand how to multiply fractions by a whole number; understand how to multiply two fractions together, including mixed fractions; understand the relationship between fractions and division; know how to divide fractions and mixed fractions; convert decimals to fractions. All the Math Worksheets in this section are informed by the Elementary Math Benchmarks for 5th Grade. Here you will find a range of Free Printable Division Games to help kids learn their division facts. Using these games will help your child to learn their division facts, and also to develop their memory and strategic thinking skills. How to Print or Save these sheets Need help with printing or saving? Follow these 3 steps to get your worksheets printed perfectly! How to Print or Save these sheets Need help with printing or saving? Follow these 3 steps to get your worksheets printed perfectly! Sign up for our newsletter to get free math support delivered to your inbox each month. Plus, get a seasonal math grab pack included for free! The Math Salamanders hope you enjoy using these free printable Math worksheets and all our other Math games and resources. If you have any questions or need any information about our site, please get in touch with us using the 'Contact Us' tab at the top and bottom of every page. When we do long division, it doesn't always result in a whole number. Sometimes there are numbers left over. We can continue the long division process to find the answer to a certain number of decimal places. The key to extending long division into decimals is knowing that we can add zeros after the decimal point. Example: 150 is the same as 150.00 We can add as many zeros as needed after the decimal point without changing the number’s value. We will use the example below. It works out neatly to one decimal place: If you feel happy with the process on the long division page you can skip the first bit. 4 ÷ 25 = 0 remainder 4 The first number of the dividend is divided by the divisor.   The whole number result is placed at the top. Any remainders are ignored at this point. 25 × 0 = 0 The answer from the first operation is multiplied by the divisor. The result is placed under the number divided into. 4 − 0 = 4 Now we take away the bottom number from the top number.   Bring down the next number of the dividend. 43 ÷ 25 = 1 remainder 18 Divide this number by the divisor.   The whole number result is placed at the top. Any remainders are ignored at this point. 25 × 1 = 25 The answer from the above operation is multiplied by the divisor. The result is placed under the last number divided into. 43 − 25 = 18 Now we take away the bottom number from the top number.   Bring down the next number of the dividend. 185 ÷ 25 = 7 remainder 10 Divide this number by the divisor.   The whole number result is placed at the top. Any remainders are ignored at this point. 25 × 7 = 175 The answer from the above operation is multiplied by the divisor. The result is placed under the number divided into. 185 − 175 = 10 Now we take away the bottom number from the top number.   Now we have reached the end of the whole numbers we add a decimal place and the first zero. Notice the decimal point which has appeared on the answer line and by the dividend. It does not appear anywhere else.   Bring down the next number of the dividend. 100 ÷ 25 = 4 remainder 0 Divide this number by the divisor.   The whole number result is placed at the top. Any remainders are ignored at this point. 25 × 4 = 100 The answer from the above operation is multiplied by the divisor. The result is placed under the number divided into. 100 − 100 = 0 Now we take away the bottom number from the top number.   The subtraction has given zero. We stop when this happens. The answer is 17.4 As long as the subtraction gives a number above zero the long division can carry on to as many decimal places as we wish. Answer: 435 ÷ 25 = 17.4 1645, 1646, 1647, 1648, 3441, 3442, 1649, 3443, 1650, 3444

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