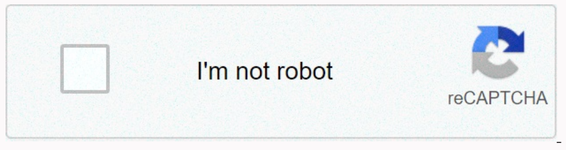

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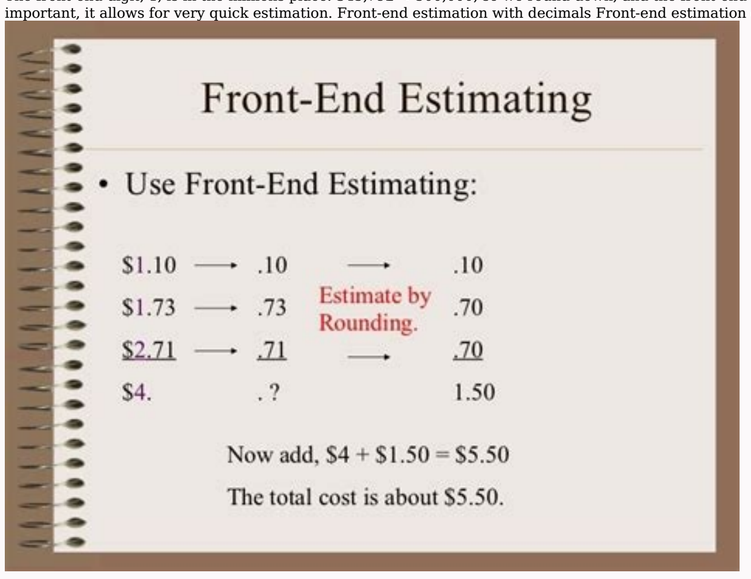
How to use front end estimation with decimals

What is front end estimation with decimals. How to do front end estimation with decimals.

In order to continue enjoying our site, we ask that you confirm your identity as a human. Thank you very much for your cooperation. home / primary math / decimal / front-end digitThe front-end digit in a number is the first digit, reading the number from left to right. It is the digit in the number that has the greatest place value. In the decimal numeral system, each digit can be referred to based on their place value, as in the figure below: In the figure above, the 3 in the hundreds place is the front-end digit. It can be useful to refer to the 3 as the front-end digit rather than to reference it based on its place value since the front-end digit's place value will always change as the number of digits in the numeral changes. Thus, for applications in which the front-end digit is important, like front-end estimation, referring to it as such is convenient. Front-end estimation Front-end estimation involves rounding based on the front-end digit such that the front-end digit is the only non-zero digit of the number. The purpose of front-end estimation is to to simplify a calculation. Examples of front-end estimation include rounding 115 to 100, 1925 to 2000, or 623,234,798 to 600,000,000. In all of the examples, the only non-zero digit is the front-end digit, so the only thing that really needs to be considered is whether the front-end digit stays the same (rounding down) or increases by 1 (rounding up). To determine whether to round up or down, first determine the place value of the front-end digit. Then determine whether the value of the numbers following the front-end digit is more than half or less than half that of the front-end digit. For example, if the place value of the front-end digit is the hundreds place and the following numbers have a value of greater than or equal to 50, we would increase the front-end digit by 1. If the value is less than 50, we would keep the same front-end digit. Examples Round the following numbers based to the front-end digit. 1. 476: The front-end digit, 4, is in the hundreds place. 76 > 50, so we round up, and increase the front-end digit by 1. 476 → 500 2. 1,345,792: The front-end digit, 1, is in the millions place. 345,792 < 500,000, so we round down, and the front-end digit stays the same. 1,345,792 → 1,000,000 The closer the original number is to the rounded value, the more accurate the estimation. This is one of the least accurate estimation methods, but for applications where the accuracy is not too important, it allows for very quick estimation. Front-end estimation with decimals Front-end estimation can also be used to simplify decimal operations. For instance, to find the sum of some decimals, add the whole portions of the decimal separately, then use front-end estimation on the decimal portions.



Example Use front-end estimation to find the following sum: 24.66 + 8.23 + 12.98 Sum the whole number portions first: 24 + 8 + 12 = 44 Use front-end estimation to simplify the decimal portions: 0.66 → 1 0.23 → 0 0.98→ 1 Then add the whole number portions and the decimal estimates together: 44 + 1 + 0 + 1 = 46 The exact solution is 45.87, so in this particular case, the estimation is very accurate. If we wanted to make it even more accurate, we could treat the first digit in the decimal portion as the front-end digit: 0.66 → 0.7 0.23 → 0.2 0.98→ 1 44 + 0.7 + 0.2 + 1 = 45.9 In order to continue enjoying our site, we ask that you confirm your identity as a human. Thank you very much for your cooperation. Estimate Sums and Differences Using Front-End Estimation Loading... Found a content error? Tell us Estimate Sums and Differences Using Front-End Estimation Loading... Found a content error? Tell us Please wait...

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