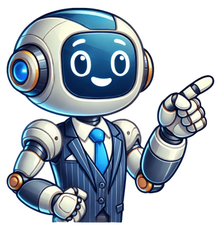
Click Here



Sig figs practice

Dark mode This online quiz is intended to give you extra practice in counting significant figures ("sig figs") in decimal and scientific notation as well as simple arithmetic problems. Select your preferences below and click 'Start' to give it a try! Your Scorecard The scorecard of a champion Your game must be published for scores to save! 100% needed Explanation All non-zero digits are significant. Zeros between digits are significant. Significant figures are the digits in a number that contribute to its precision and accuracy. In this case, each of the digits - 5, 0, and 4 - is considered significant because they provide information about the value of the number. Explanation Remember the rules: All non-zero digits are significant. Zeros between digits are significant. Zeros in front of a number are not significant. The zeros before the "5" are not significant because they serve as placeholders to indicate the decimal point's position and do not contribute to the precision of the measurement. Therefore, the number 0.0504 has three significant figures. Explanation All non-zero digits are significant. Zeros between digits are significant. Zeros in front of a number are not significant. Zeros at the end of a number that represents a measured quantity is a significant digit. Zeros to the right of a decimal point show how accurately a measurement is taken and is significant. Explanation The number of significant figures in a measurement is determined by the precision of the measuring tool and the certainty of the digits reported. In the case of the mass of 0.034 grams:The leading zero is not considered significant.The trailing zero after the decimal point is significant.The non-zero digit "3" is significant.So, there are two significant figures in the mass of 0.034 grams. Therefore, the correct option is 2. Explanation In the number 0.002, there is one significant figure. Leading zeros, which are zeros to the left of the first non-zero digit, are not considered significant. Therefore, only the digit 2 is counted as a significant figure in this case. Explanation To determine the number of significant figures in 0.00032040: Leading zeros (zeros before the first non-zero digit) are not significant. These only indicate the position of the decimal point. All non-zero digits are significant because they represent measured values. Trailing zeros after the decimal point are significant because they indicate the precision of the measurement. In this number: The leading zeros (0.000) are not significant. The digits 3, 2, 0, 4, and the final zero are all significant. Thus, the number 0.00032040 has 5 significant figures. Explanation In the number "5040 toys," the zeros at the end of the number (after the non-zero digits) are not considered significant figures. They are placeholders that indicate the magnitude of the number but do not contribute to its precision. So, in this case, there are three significant figures: "5," "0," and "4." The trailing zeros after "4" are not counted as significant. Explanation In the mass of 504.30 grams, there are five significant figures. Explanation: All non-zero digits are significant. Zeros between non-zero digits are significant. Trailing zeros in a number containing a decimal point are significant. So, in the number 504.30: The digits 5, 0, 4, 3, and the final 0 are all significant. Explanation When adding 13.4 and 2.4, both numbers have 1 decimal place. According to the rules for significant figures in addition, the result should be rounded to the least number of decimal places present in the numbers being added. Adding 13.4 and 2.4 gives 15.8. Since both original numbers have 1 decimal place, the final answer is also rounded to 1 decimal place, resulting in 15.8. Explanation In the number 560,890, there are five significant figures. Significant figures are the digits in a number that contribute to its precision and are used to convey the level of uncertainty in a measurement or value. In this case, all the digits (5, 6, 0, 8, and 9) are considered significant because they provide information about the quantity being represented, and there are no leading or trailing zeros that are not significant. Explanation The digits 2, 1, 3, and 9 are significant because they convey meaningful information about the value. The trailing zero (0) at the end of the number is also considered significant when it comes after a decimal point. It indicates the precision of the measurement. So, there are five significant figures in the number 2.1390. Explanation The digits 6, 7, 8, 0, 2, and 4 are all significant because they represent meaningful information about the value. The trailing zeroes after the decimal point (the zeroes to the right of the decimal point) are also significant in this context. They indicate the precision of the measurement. So, there are eight significant figures in the number 678.02400. Explanation Significant figures indicate the precision of a measurement. In the number 1.00400, all the digits convey meaningful information. The leading '1' and the '4' are significant as non-zero digits. The zeros between them are also significant as they are captive zeros. Additionally, the trailing zeros after the decimal signify increased precision, thus contributing to the total count of significant figures. Explanation In multiplication and division: The result should be rounded to the same number of significant figures as the factor with the least number of significant figures. Count the significant figures in each factor: 2.34 has 3 significant figures. 1.1 has 2 significant figures. The unrounded result of the multiplication is: 2.34×1.1=2.574 Since the factor with the fewest significant figures (1.1) has 2 significant figures, the result must be rounded to 2 significant figures: Rounded result: 2.6. Correct Answer A. 10.4 (3 significant figures) Explanation The sum of the numbers is: 3.01 + 2.32 + 5.1 = 10.43 When adding these numbers, you should retain the same number of decimal places as the number with the fewest decimal places, which, in this case, is "5.1." Therefore, the answer should be rounded to one decimal place: 10.43 (rounded to one decimal place) Correct Answer A. 1603 (4 significant figures) Explanation In multiplication and division, the rule for determining the number of significant figures in the result is that it should have the same number of significant figures as the least precise number being multiplied or divided. Since 123.1 is the least precise number with 4 significant figures, the result should also have 4 significant figures. Explanation In the number 0.004506, the leading zeros (0.00) are not significant. The significant digits are 4, 5, 0, and 6. The zero between the 5 and 6 is significant because it is between two non-zero digits. Therefore, there are a total of four significant figures in the given number. Quiz Review Timeline (Updated): Mar 28, 2025 + Our quizzes are rigorously reviewed, monitored and continuously updated by our expert board to maintain accuracy, relevance, and timeliness. Mar 28, 2025 Quiz Edited byProProfs Editorial Team Expert Reviewed byJanaisa Harris