

Chemistry Practice Problems - Significant Figures

- How many significant figures are in the number 0.00456?
 - 2
 - 3
 - 4
 - 5
- Which of the following numbers has four significant figures?
 - 0.0045
 - 4,500
 - 0.0450
 - 45.00
- Calculate the result of 3.45×2.1 and give your answer with the correct number of significant figures.
 - 7
 - 7.25
 - 7.2
 - 7.245
- Which operation will result in a number with two significant figures?
 - $12.3 + 0.56$
 - 5.4×2.3
 - $7.89 + 3.1$
 - 0.0045×200
- What is the correct number of significant figures in the sum of $12.11 + 0.22 + 3.1$?
 - 2
 - 3
 - 4
 - 5
- Round the number 0.00456789 to three significant figures.
 - 0.0045
 - 0.00457
 - 0.004568
 - 0.0046
- Which of the following numbers has the same number of significant figures as 0.006740?
 - 6.74
 - 6.740×10^{-3}
 - 0.067400
 - 0.00674

8. When multiplying 0.0045 by 2.34, how many significant figures should the result contain?
- A. 2
 - B. 3
 - C. 4
 - D. 5
9. Which of the following represents 123,000 rounded to three significant figures?
- A. 123
 - B. 123,000
 - C. 1.23×10^5
 - D. 1.230×10^5
10. If you subtract 0.005 from 2.04, how many significant figures should your answer contain?
- A. 2
 - B. 3
 - C. 4
 - D. 5

Answer Key

1. 0.00456 has three significant figures: 4, 5, and 6. Correct Answer: B
2. 45.00 has four significant figures. The zeros are significant because they are after a decimal point and a non-zero digit. Correct Answer: D
3. $45 \times 2.1 = 7.245$, rounded to 7.2 with two significant figures (since 2.1 has the fewest significant figures). Correct Answer: C
4. $5.4 \times 2.3 = 12$, which has two significant figures (since 5.4 and 2.3 each have two significant figures). Correct Answer: B
5. The sum is 15.43, but the least number of digits after the decimal in the data is one (3.1), so the answer has three significant figures (15.4). Correct Answer: B
6. 0.00456789 rounded to three significant figures is 0.00457. Correct Answer: B
7. 0.006740 has four significant figures. 6.740×10^{-3} also has four significant figures. Correct Answer: B
8. When multiplying 0.0045 (2 significant figures) by 2.34 (3 significant figures), the result should have 2 significant figures. Correct Answer: A
9. 123,000 has 3 significant figures, as does 1.23×10^5 . Correct Answer: B or C
10. $2.04 - 0.005 = 2.035$, but the answer should have two digits after the decimal (2.04), so it contains three significant figures. Correct Answer: B