

Name: _____

Period: _____

Significant Figures

SIGNIFICANT FIGURES:

- The digits in a measurement that are known with certainty.
- Measured quantities are always to be reported in a way that shows the precision in their measurement.
- The number of digits known with certainty is known as the number of “significant figures”

SIGNIFICANT FIGURES RULES:

- Zeroes *within* a number **are** significant
- Zeroes that are simply holding the place of the decimal **are not** significant
- Trailing zeroes that are *not* needed to hold the decimal point **are** significant

5.6054 has 5 significant figures
2,600,000 has 2 significant figures
2.600 000 × 10⁶ has 7 significant figures

MATH WITH SIGNIFICANT FIGURES:

- Answers should reflect the *lowest* number of significant figures of any of the values used.
- When measurements are **added or subtracted**, the answer can contain no more **decimal places** than the least accurate measurement
- When measurements are **multiplied or divided**, the answer can contain no more **significant figures** than the least accurate measurement.

EXAMPLES:

12.4 has 3 significant figures
3.5633 has 4 significant figures

Adding:

12.3 + 3.5633 = 15.8633
Corrected for Significant Figures:
12.3 + 3.5633 = 15.9

Multiplying:

32.3 × 3.5724 = 115.38852
Corrected for Significant Figures:
32.3 × 3.5724 = 115

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Significant Figures Practice

How many significant figures does each of the following values have?

_____ 1. 5.606608

_____ 2. 5604

_____ 3. 332.445

_____ 4. 320

_____ 5. 500,000

Answer the following problems with the correct number of significant figures.

_____ 6. 5.667×3.2

_____ 7. $8323 - 6678$

_____ 8. 0.000032×456332

_____ 9. $0.0221002 + 0.0332$

_____ 10. $390 / 3$

Answer the following problems with the correct number of significant figures and in scientific notation.

_____ 11. 455×32

_____ 12. $964 - 338$

_____ 13. $3.221 + 453.221$

_____ 14. $60.63 / 20.21$

_____ 15. 734×91