

Name _____

Chemistry

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Answer each of the following questions.

Part I: Determine the number of significant figures for the following:

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|---------------------|-----------------------|----------------------|--------------------------------------|
| 1. 345 - 3 | 5. 39.5 - 3 | 9. 139.0 - 4 | 13. 1.95×10^{-8} - 3 |
| 2. 0.93 - 2 | 6. 0.09305 - 4 | 10. 1.008 - 4 | 14. 89050 - 4 |
| 3. 340 - 2 | 7. 38.05 - 4 | 11. 10001 - 5 | 15. 3.9×10^3 - 2 |
| 4. 0.097 - 2 | 8. 0.00760 - 3 | 12. 160. - 3 | 16. 3900. - 4 |

Part II: Express the following calculations in the proper number of significant figures.

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| 1. $2.08 + 3.312 + 1.0032 =$ 6.40 | 7. $129/29.2 =$ 4.42 |
| 2. $3.745 + 9.1 + 15.0234 =$ 27.9 | 8. $30.8/45.0 =$ 0.684 |
| 3. $0.0097 + 5.623 + 3.33 =$ 8.96 | 9. $0.098/45.4 =$ 0.0022 |
| 4. $17.65 - 4.337 =$ 13.31 | 10. $3.45/0.78 =$ 4.4 |
| 5. $1106.73 - 323.74 =$ 782.99 | 11. $1.551 \times 3.260 \times 4.9001 =$ 24.78 |
| 6. $15.24 - 2.2 - 3.338 =$ 9.7 | 12. $3.02 \times 500. \times 0.0023 =$ 3.5 |

Part III: Round each of the following numbers to requested number of significant figures:

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|--|---|
| 1. 395 (1 significant figure) - 400 | 6. 139.045 (5 significant figures) - 139.05 |
| 2. 2.0098 (3 significant figures) - 2.01 | 7. 78765.980 (4 significant figures) - 78770 |
| 3. 556.6552 (2 significant figures) - 560 | 8. 1.999 (3 significant figures) - 2.00 |
| 4. 374736.87 (3 significant figures) - 375000 | 9. 0.0098754 (3 significant figures) - 0.00988 |
| 5. 750 (1 significant figure) - 800 | 10. 8.855 (3 significant figures) - 8.86 |

Part IV: Convert the following temperatures.

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|---|--|
| 1. 302°C to Kelvin = 575 K | 4. 177°C to Kelvin = 450. K |
| 2. 185 K to Celsius = -88 °C | 5. 250. K to Celsius = -23 °C |
| 3. 0°C to Kelvin = 273 K | 6. 0 K to Celsius = -273 °C |