Statistics Support Activity:
Proportion, Percentages & Scientific Notation Conversions

Notes

- **Percentages:** A percentage "%" is a measure or count out of 100. For example, 41% means 41 out of 100.
- **Proportions:** A proportion is the decimal equivalent of a percentage. For example, 13.8% = 0.138 or .138
- **Rounding Percentages:** Percentages are usually rounded to the tenths place (one place to right of decimal point). For example, 34.389215% ≈ 34.4%
- **Rounding Proportions:** Proportions are usually rounded to the thousandths place (three places to the right of the decimal point). For example, 0.1862473 ≈ 0.186 or .186
- **Converting Percentage to Proportion:** To convert a percentage into a proportion, remove the "%" symbol and divide by 100. Or move decimal two places to the left.
  For example, 52.7% = 52.7 ÷ 100 = 0.527 or .527
- **Converting Proportion to Percentage:** To convert a proportion into a percentage, multiply the proportion by 100 and then put on the "%" symbol. Or move the decimal two places to the right. For example, 0.026 = 0.026 ×100% = 2.6%
- **Scientific Notation:** Very large or very small decimals are often written in scientific notation. Multiplying by a positive power of 10 moves the decimal to the right the same number of places as the exponent. Multiplying by a negative power of 10 moves the decimal to the left the same number of places as the exponent. *(Note: Some calculators may use "E" instead of "*$\times 10$*")*
  For example, 8.19×10^{-4} = 0.000819 or .000819 and 6.035×10^{6} = 6035000
- **Converting Scientific Notation into a Percentage:** Proportions very close to zero are often written in scientific notation with a negative exponent. You will need to do two separate conversions to make it into a percentage. First convert the scientific notation into a decimal proportion by moving the decimal to the left the same number of places as the exponent. After you have the decimal proportion, convert it into a percentage by multiply the proportion by 100 and then put on the "%" symbol.
  For example, 8.19×10^{-4} = 0.000819 = 0.000819 ×100% = 0.0819% or .0819%

Problems

Convert the following percentages into decimal proportions. Do not round the answers.

1. 14.7%
2. 8.32%
3. 100%
4. 15.6%
5. 3%
6. 0.51%
7. 20.9%
8. 0.072%
9. 40%
10. 6.81%

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Convert the following decimal proportions into percentages. Do not round the answers.

11. 0.374
12. 0.0063
13. 1
14. 0.7
15. 0.02
16. 0.00049
17. 0.51
18. 0.0581
19. 0.004
20. 3.5

Convert the following scientific notations into decimal. Do not round the answer.

21. 1.83×10^{5}
22. 2.6×10^{-3}
23. 7.508×10^{4}
24. 6.1×10^{-2}
25. 9×10^{6}
26. 3×10^{-5}

Convert the following scientific notations into a percentage. *(Remember you need to do two conversions.)* Do not round the answer.

27. 2.45×10^{-4}
28. 7.17×10^{-2}
29. 5.01×10^{-3}
30. 1.44×10^{-1}
31. 8×10^{-5}
32. 5×10^{-6}