Name _____

SCIENTIFIC NOTATION & DIMENSIONAL ANALYSIS

A. Change the following to Scientific Notation (maintain the number of significant figures):

1. 5.280 = 5.280×10^{0}
2. 2,000 = 2×10^{3}
3. 15 = 1.5×10^{1}
4. 6,589,000 = 6.589×10^{6}
5. 70,400,000,000 = 7.04×10^{10}
6. .00263 = 2.63×10^{-3}
7. .00589 = 5.89×10^{-3}
8. .006 = 6×10^{-3}
9. .400 = 4.00×10^{-1}
10. .08060 = 8.060×10^{-2}
11. 2,560 = 2.56×10^{3}
12. .0009 = 9×10^{-4}
13. 8,900,000 = 8.9×10^{6}
14. .0920 = 9.20×10^{-2}
15. 6,300 = 6.3×10^{3}
16. .90 = 9.0×10^{-1}
17. 250 = 2.5×10^{2}
18. .006087 = 6.087×10^{-3}
19. 500,000 = 5×10^{5}
20. .0000000105 = 1.05×10^{-8}

B. Make the following Metric System conversions using "dimensional analysis" (you may use scientific notation):

1. 100 mg $\frac{1\ g}{1000\ mg}$ = 0.1 g 1×10^{-1}
2. 20 cm $\frac{1\ m}{100\ cm}$ = 0.2 m 2×10^{-1}
3. 50 L $\frac{1\ kL}{1000\ L}$ = .05 kL 5×10^{2}
4. 22 g $\frac{100\ cg}{1\ g}$ = 2200 cg 2.2×10^{3}
5. 825 cm $\frac{1\ m}{100\ cm} \times \frac{1\ km}{1000\ m}$ = .00825 km or 8.25×10^{-3}
6. 2,350 kg $\frac{1000\ g}{1\ kg}$ = 2350000 g or 2.35×10^{6}
7. 19 mL $\frac{1\ L}{1000\ mL} \times \frac{100\ cL}{1\ L}$ = 1.9 cL or 1.9×10^{0}
8. 52 km $\frac{1000\ m}{1\ km}$ = 52000 m or 5.2×10^{4}
9. 36 m $\frac{100\ cm}{1\ m}$ = 3600 cm or 3.6×10^{3}
10. 18 cm $\frac{1\ m}{100\ cm} \times \frac{1000\ mm}{1\ m}$ = 180 mm or 1.8×10^{2}
11. 6 g $\frac{1000\ mg}{1\ g}$ = 6000 mg or 6×10^{3}
12. 4,259 mg $\frac{1\ g}{1000\ mg}$ = 4.259 g or 4.259×10^{0}