

Scientific Notation and Unit Prefixes

Make the following conversions:

- | | |
|-------------------------------|--------------------------------|
| 1) 3.4 liters to milliliters | 6) 45 meters to centimeters |
| 2) 876 millimeters to meters | 7) 11.7 grams to kilograms |
| 3) 78,999 milligrams to grams | 8) 0.0009 kiloliters to liters |
| 4) 0.9 centigrams to grams | 9) 44 centimeters to meters |
| 5) 112 meters to millimeters | 10) 277 kilograms to grams |

Convert the following to scientific notation:

- 11) 45,700 _____
- 12) 0.009 _____
- 13) 23 _____
- 14) 0.9 _____
- 15) 24,212,000 _____
- 16) 0.000665 _____

$$\text{milli} = \frac{1}{1000} \text{ OR } .001 \quad 10^{-3}$$

$$\text{centi} = \frac{1}{100} \text{ OR } .01 \quad 10^{-2}$$

Scientific Notation and Unit Prefixes

$$\text{Kilo} = 1000 \text{ OR } 10^3$$

Make the following conversions:

- 1) 3.4 liters to milliliters

$$3.4 \text{ L} \times \frac{1000 \text{ mL}}{1 \text{ L}} =$$

- 6) 45 meters to centimeters

$$45 \text{ m} \times \frac{100 \text{ cm}}{1 \text{ m}} =$$

- 2) 876 millimeters to meters

$$876 \text{ mm} \times \frac{1 \text{ m}}{1000 \text{ mm}} =$$

- 7) 11.7 grams to kilograms

$$11.7 \text{ g} \times \frac{1 \text{ kg}}{1000 \text{ g}} =$$

- 3) 78,999 milligrams to grams

$$78,999 \text{ mg} \times \frac{1 \text{ g}}{1000 \text{ mg}} =$$

- 8) 0.0009 kiloliters to liters

$$0.0009 \text{ KL} \times \frac{1000 \text{ L}}{1 \text{ KL}} =$$

- 4) 0.9 centigrams to grams

$$0.9 \text{ centg} \times \frac{1 \text{ g}}{100 \text{ centg}} =$$

- 9) 44 centimeters to meters

$$44 \text{ cm} \times \frac{1 \text{ m}}{100 \text{ cm}} =$$

- 5) 112 meters to millimeters

$$112 \text{ m} \times \frac{1000 \text{ mm}}{1 \text{ m}} =$$

- 10) 277 kilograms to grams

$$277 \text{ kg} \times \frac{1000 \text{ g}}{1 \text{ kg}} =$$

Convert the following to scientific notation:

11) 45,700 4.57×10^4

12) 0.009 9×10^{-3}

13) 23 2.3×10^1

14) 0.9 9×10^{-1}

15) 24,212,000 2.4212×10^7

16) 0.000665 6.65×10^{-4}

Convert the following to scientific notation:

17) 21.9 _____

18) 0.00332 _____

19) 321 _____

20) 0.119 _____

21) 1492 _____

22) 0.2713 _____

23) 314159 _____

24) 6022 _____

25) 0.12011 _____

Convert the following numbers in scientific notation to expanded form:

26) 3.825×10^3 _____

27) 6.3×10^4 _____

28) 2.3×10^{-2} _____

29) 4.44×10^{-6} _____

30) 7.121×10^9 _____

31) 1.2×10^{-1} _____

32) 1.8×10^2 _____

33) 8.1×10^{-4} _____

34) 6.7×10^5 _____

35) 3.4×10^7 _____

Convert the following to scientific notation:

- 17) 21.9 2.19×10^1
- 18) 0.00332 3.32×10^{-3}
- 19) 321 3.21×10^2
- 20) 0.119 1.19×10^{-1}
- 21) 1492 1.492×10^3
- 22) 0.2713 2.713×10^{-1}
- 23) 314,159 3.14159×10^5
- 24) 6022 6.022×10^3
- 25) 0.12011 $1.2011 \times$

Convert the following numbers in scientific notation to expanded form:

- 26) 3.825×10^3 3,825
- 27) 6.3×10^4 63,000
- 28) 2.3×10^{-2} .023
- 29) 4.44×10^{-6} .00000444
- 30) 7.121×10^9 7,121,000,000
- 31) 1.2×10^{-1} .12
- 32) 1.8×10^2 180
- 33) 8.1×10^{-4} .00081
- 34) 6.7×10^5 670,000
- 35) 3.4×10^7 34,000,000