Exponents and The Metric System:

Exponents

1. For each of the following identify the base and the exponent.

 a. T6 b. 573 c. 6f2

d. 2+62+a e. -94x f. (3-y)7

2. Write the following in exponent notation.

a. 8(8)(8)(8)(8)(8) b. 4(z)(4)(4)(4)(z)(4)(z) c. -7(-7)(-7)(-7)

3. Simplify (don’t solve) the following.

a. 56(5)(53) b. 67(6-3) c. W24(W5+11)

d. $\frac{14^{12}}{14^{4}}$ e. $\frac{9^{4}9^{5}}{9^{7}}$ f. 4+36(34)

g. h6h+43 h. 76(52)(59)(7-9) i. $\frac{14^{6+w}14^{2w-7}}{14^{9-3w}}$

Metric:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| kilo (k) | hecto (h) | deka (da) | BASE UNIT (m,g,L,s,J…) | deci (d) | centi (c) | milli (m) |
| 103=1000 | 102=100 | 101=10 | 10-1=0.1 | 10-2=0.01 | 10-3=0.001 |

1. Complete the following metric conversions by moving the decimal place.

A. 12m = \_\_\_\_\_\_\_\_\_\_\_ cm B. 3.0km=\_\_\_\_\_\_\_\_\_\_\_ m C. 0.45kg=\_\_\_\_\_\_\_\_\_\_\_ g

D. 10mm=\_\_\_\_\_\_\_\_\_\_\_m E. 0.75J=\_\_\_\_\_\_\_\_\_\_\_hJ F. 225cL=\_\_\_\_\_\_\_\_\_\_\_kL

G. 135dam=\_\_\_\_\_\_\_\_\_\_\_mm H. 2345dg=\_\_\_\_\_\_\_\_\_\_\_cg I. 0.771cT=\_\_\_\_\_\_\_\_\_\_\_daT

2. Complete the following metric conversions by using appropriate conversion factors. If you only need one conversion factor, just leave the second one blank. Be sure to show how the units are cancelled. The first one is done for you as an example.

A. Convert 225hg to mg

 x $\left(\frac{ }{ }\right)$ x $\left(\frac{ }{ }\right)$ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

B. Convert 0.67hg to mg

x $\left(\frac{ }{ }\right) $x $\left(\frac{ }{ }\right)$ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

C. Convert 299cm to dam

x $\left(\frac{ }{ }\right) $x $\left(\frac{ }{ }\right)$ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D. Convert 335m to km

x $\left(\frac{ }{ }\right) $x $\left(\frac{ }{ }\right)$ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

E. Convert 65ms to s

x $\left(\frac{ }{ }\right) $x $\left(\frac{ }{ }\right)$ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

F. Convert 355mL to cL

x $\left(\frac{ }{ }\right) $x $\left(\frac{ }{ }\right)$ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_