

**Fundamentals:** Some practice problems for unit conversion, graphing, and math stuff

Part 1 – Move the decimal point to convert these SI to SI measurements. No work needed.

- 1) 730 mL = \_\_\_\_\_ L
- 2) 62 mg = \_\_\_\_\_ g
- 3) 0.82 kL = \_\_\_\_\_ L
- 4) 9.63 dm = \_\_\_\_\_ m
- 5) 382 dg = \_\_\_\_\_ g
- 6) 304 cg = \_\_\_\_\_ dg
- 7) 817 mg = \_\_\_\_\_ g
- 8) 37 L = \_\_\_\_\_ daL
- 9) 3.8 L = \_\_\_\_\_ mL
- 10) 7 km = \_\_\_\_\_ hm
- 11) 9.4 dm = \_\_\_\_\_ cm
- 12) 23 m = \_\_\_\_\_ dam
- 13) 5.1 m = \_\_\_\_\_ dm
- 14) 58.3 mm = \_\_\_\_\_ pm
- 15) 3.67 cL = \_\_\_\_\_ mL
- 16) 8632 g = \_\_\_\_\_ Mg
- 17) 2641 mL = \_\_\_\_\_ hL
- 18) 78.12 dm = \_\_\_\_\_ mm
- 19) 81 mL = \_\_\_\_\_ cL
- 20) 6.4 g = \_\_\_\_\_ kg
- 21) 45 m = \_\_\_\_\_ cm
- 22) 53 pg = \_\_\_\_\_ mg
- 23) 0.456 Gm = \_\_\_\_\_ km
- 24) 8.52 dm = \_\_\_\_\_ m
- 25) 271 mg = \_\_\_\_\_ g
- 26) 394 cL = \_\_\_\_\_ dL
- 27) 70.6 cg = \_\_\_\_\_ hg
- 28) 26 L = \_\_\_\_\_ dL
- 29) 6.9 km = \_\_\_\_\_ m
- 30) 3 Gg = \_\_\_\_\_ pg

Part 2 – Use unit cancellation to convert these SI/US traditional measurements. Show your work on your own paper.

- 1) 150 lb = \_\_\_\_\_ N
- 2) 5.67 ft = \_\_\_\_\_ m
- 3) 85 in = \_\_\_\_\_ cm
- 4) 2.63 yd = \_\_\_\_\_ m
- 5) 4.3 gal = \_\_\_\_\_ L
- 6) 6.5 h = \_\_\_\_\_ s
- 7) 15 in = \_\_\_\_\_ m
- 8) 6.0 cm = \_\_\_\_\_ in
- 9) 180 N = \_\_\_\_\_ lb
- 10) 91.44 m = \_\_\_\_\_ ft
- 11) 2 L = \_\_\_\_\_ qt
- 12) 0.25 mi = \_\_\_\_\_ m
- 13) 150 km = \_\_\_\_\_ mi
- 14) 30 ft = \_\_\_\_\_ m
- 15) 200 weeks = \_\_\_\_\_ min
- 16) 5 ft 6 in = \_\_\_\_\_ m
- 17) 55 mi/h = \_\_\_\_\_ km/h
- 18) 90 km/h = \_\_\_\_\_ mi/hr
- 19) 100 ft/s = \_\_\_\_\_ km/h
- 20) 25 m/s = \_\_\_\_\_ mi/h

Part 4 - Put the numbers into or take out of scientific notation:

- 1)  $7.239 \times 10^5 =$  \_\_\_\_\_
- 2)  $8.2 \times 10^{-6} =$  \_\_\_\_\_
- 3) 528 = \_\_\_\_\_
- 4) 405,250,000 = \_\_\_\_\_
- 5)  $6.47 \times 10^3 =$  \_\_\_\_\_
- 6)  $9.4 \times 10^{-9} =$  \_\_\_\_\_
- 7) 3,548 = \_\_\_\_\_
- 8) 0.009 7 = \_\_\_\_\_
- 9)  $7 \times 10^0 =$  \_\_\_\_\_
- 10)  $1.23 \times 10^9 =$  \_\_\_\_\_
- 11) 427 = \_\_\_\_\_
- 12) 0.000 000 000824 = \_\_\_\_\_
- 13)  $5.83 \times 10^{10} =$  \_\_\_\_\_
- 14) 36,700 = \_\_\_\_\_
- 15) 2,016,000 = \_\_\_\_\_
- 16)  $5.3 \times 10^{-7} =$  \_\_\_\_\_
- 17) 40.6 = \_\_\_\_\_
- 18)  $9.67 \times 10^{16} =$  \_\_\_\_\_
- 19) 0.000 840 1 = \_\_\_\_\_
- 20)  $5.98 \times 10^{-4} =$  \_\_\_\_\_
- 21) 3,909.25 = \_\_\_\_\_
- 22)  $6.1 \times 10^5 =$  \_\_\_\_\_
- 23) 0.063 = \_\_\_\_\_
- 24) 44,444,444 = \_\_\_\_\_
- 25)  $8.88 \times 10^{-3} =$  \_\_\_\_\_
- 26) 0.000 000 222 = \_\_\_\_\_
- 27)  $1.01 \times 10^{17} =$  \_\_\_\_\_
- 28) 85,947,200 = \_\_\_\_\_
- 29)  $7.77 \times 10^{-5} =$  \_\_\_\_\_
- 30) 987,612,345 = \_\_\_\_\_

**Fundamentals: Part 4 – Graph**  
the following data sets:

GRAPH #1		GRAPH #2		GRAPH #3	
time (min)	distance (ft)	mass (kg)	acceleration (m/s <sup>2</sup> )	volume (mL)	mass (g)
1	4	10	46	2	17
2	9	20	93	4	31
3	15	30	138	6	43
4	21	40	184	8	56
5	25	50	230	10	72
6	32	60	280	12	80
7	35	70	322	14	99
8	39	80	368	16	115
9	48	90	405	18	128
10	50	100	460	20	140
GRAPH #4		GRAPH #5		GRAPH #6	
area (in <sup>2</sup> )	pressure (psi)	Time (s)	Force (N)	clowns	jokes told
3	2.52	4	9	5	270
6	5.04	8	14	10	540
9	7.56	12	27	15	810
12	10.08	16	30	20	1080
15	12.6	20	45	25	1350
18	15.12	24	53	30	1620
21	17.64	28	56	35	1890
24	20.16	32	62	40	2160
27	22.68	36	72	45	2430
30	25.2	40	80	50	2700

[Answer key for part 4](#)

Part 5

Rearrange the following equations so that y is isolated on the left side of the equal sign.

1)  $x = \frac{y}{z}$

4)  $x = \frac{y - z}{t}$

2)  $x = \frac{z}{y}$

5)  $x = \frac{1}{2} \cdot y \cdot z^2$

3)  $x = y \cdot z$

6)  $x = \frac{1}{2} \cdot z \cdot y^2$

[Answer key for part 5](#)