Physics 11: Pre Test Practice

Measurement, Sig. Figs, Metric, Scientific Notation, Units and Conversions.

**1. Write the following in Scientific Notation**

 a. 7500m b. 0.000081m/s c. 0.0042x104s

 d. 36.0cm2 e. 0. 0985x10-5kg f. 36000x10-7m

 g. 66x10-4h h. 73300000000000J i. 0.000069x105N

**2. Complete the following metric conversions. (Show the appropriate conversion factors)**

 a. 36cm to m

 b. 2km to mm

c. 66mg/kL to kg/ML

 d. 222(kg m)/(s2) to (g cm)/(h2)

**3. Fill in the Blanks Below Using Scientific Notation**

There are \_\_\_\_\_\_\_\_\_\_\_\_\_ mm in one hm and there are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hm in one mm.

There are \_\_\_\_\_\_\_\_\_\_\_\_\_ g in one dg and there are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ dg in one g.

There are \_\_\_\_\_\_\_\_\_\_\_\_\_ Gs in one ks and there are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ks in one Gs.

There are \_\_\_\_\_\_\_\_\_\_\_\_\_ cm3 in one m3 and there are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m3 in one cm3.

**4. Solve the following. WITHOUT A CALCULATOR!**

a. (6x102m)(-3x10-8m)/(9x105m) b. (2x104)(5x107)10-4x102x2x1011x5x10-15x10 x7

c. $ \frac{8×10^{-6}(3×10^{22})}{2.4×10^{8}}$ d. $ \frac{2π×10^{-12}(9×10^{6})}{4π×10^{-15}}$

**5. How many significant figures are in the following measurements?**

a. 123400000m b. 0.0004560cm c. 2.750kg d. 30m

 e. 10000010N f. 1.0x102 km g. 1h 16min 45.06s h. 2 cows

 i. 3h42min j. 0.0022N k. 5000m l. 5.0x103m

**6. Complete the following operation with correct sig figs and units, if possible.**

 a. 89m + 184cm + 900cm b. 436.7km/5.2h c. 900m3/ 2500m2

 d. 316kg + 45.336m e. 2.35x109m + 3.4x1010cm

**7. Convert the following to proper physics units:**

 a. 122km/h b. 628g/cm2 c. 14(h cg)/mm

 d. 4h:11min:22.6s e. 36.4h f. 133 cm2 g/ks

**8. Complete the following:**

 a. A measurement is given as 34m. This means the measurement is between \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_, is precise to \_\_\_\_\_\_\_\_, and has \_\_\_\_\_\_\_\_ significant digits.

 b. A measurement is given as 11200kg. This means the measurement is between \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_, is precise to \_\_\_\_\_\_\_\_, and has \_\_\_\_\_\_\_\_ significant digits.

 c. A measurement is given as 1.120x104kg. This means the measurement is between \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_, is precise to \_\_\_\_\_\_\_\_, and has \_\_\_\_\_\_\_\_ significant digits.

 d. A measurement is given as 0.4666kg/L. This means the measurement is between \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_, is precise to \_\_\_\_\_\_\_\_, and has \_\_\_\_\_\_\_\_ significant digits.

**9. Complete the following (if possible). Give all answers with correct sig figs and proper units.**

 a. (12m/s)(4.0s) b. (12m/s)(4.0s) + 2.00m

 c. (12m/s)(4.0s) + 200cm d. (12m/s)(4.0s) + 2.0m/s

 e. (12m/s)/(4.0s) f. (12m/s)/(4.0s) + 6.0m/s2

 g. (12m/s)(4.0s) + ½(2.00m/s2)(4.0s)2  h. 13.5kg/m3 + 198kg/m2(0.099m)

 i. 1.2km/(0.050h) j. 950 000J + 198kJ

 k. $\frac{2.0kg ×14\frac{m}{s} }{7.0s}$ l. $\frac{2.0kg ×14\frac{m}{s} }{7.0s}$ + $\frac{16kgm^{2}}{2.0ms^{2}}$

**10. Record the position of the arrows on the rulers shown.**

 **A B**

 **0 5 10 15 (cm)**

 **C D**

 **0 1 (mm)**