Physics 20
# Review Worksheet Answer Key

1) **Convert** each of the following from metric prefixes into standard units with scientific notation:
   a) 700 nm = *700e-9 m = 7.00e-7 m*
   b) 4.5 Gs = *4.5e9 s*
   c) 1.34 pL = *1.34e-12 L*

2) **Determine** the number of sig digs in each of the following numbers:

|     |            |     |     |         |     |
|-----|------------|-----|-----|---------|-----|
| a)  | 0.00002302 | *4* | e)  | 102     | *3* |
| b)  | 543.00     | *5* | f)  | 0.00123 | *3* |
| c)  | 12.01      | *4* | g)  | 3       | *1* |
| d)  | 342 870    | *6* | h)  | 0.002   | *1* |

3) *One problem you may have is always getting them to exactly that amount. You might try filling them to about 300mL, but then your precision and accuracy will probably be poor. You could put a mark on the side of the cup that shows how high to fill it so you will at least have better precision, but if you put the mark on the wrong spot you'll still have bad accuracy.*

4) **Solve** for the variable indicated in each of the following formulas:

   a) $v_i = \sqrt{v_f^2 - 2ad}$

   b) $m = \dfrac{2E_k}{v^2}$

5) **Sketch** a graph that shows the following information:

| Temperature (°C) | Time (s) |
|------------------|----------|
| 0                | 0        |
| 5                | 10       |
| 8                | 20       |
| 16               | 30       |
| 19               | 40       |



Temperature as a function of Time