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| **Uncertainty in Measurement:**  When reading an instrument…. Write all the #s you see **+ 1** more that you ***estimate*** |
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| **1.Determine the volume in each image below:** |
|  |  |  |  |

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_\_\_\_\_\_\_**Sig Fig Practice**

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| **2. Determine the length in each centimeter rulers right:** | http://2012books.lardbucket.org/books/introduction-to-chemistry-general-organic-and-biological/section_04/4ea27ad91c2b3bbacd8630b1666c39b0.jpg | http://www.ucolick.org/~crockosi/AY2Rockosi2012/MathReview/Sigfigs/Image1.gif |
| http://cyberbridge.mcb.harvard.edu/images/math2_2.pnghttp://cyberbridge.mcb.harvard.edu/images/math2_1.png |
| http://wpscms.pearsoncmg.com/wps/media/objects/1860/1905663/mathtutorial/rulers.gif |
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| **Sig Fig Rules**1. Count all non-zero # s:1234 = 4 sig figs 100 = 1 sig figs2. Count zeros that are in b/w non-zero #s: 708 = 3 sig figs 1008 = 4 sig figs3. If # is **less** than **1**, count **all** # after the first real # : 0.000987= 3 sig figs 0.009870 = 4 sig figs *do not count the zeros to the left of the first real #* 4.If # is **greater** than **zero** **&** a **decimal point** is present, count all #s: 101.2 = 4 sig figs 1000.000= 7 sig figs |
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| **3. Determine the number of sig figs in each value** |
| 213 mg | 3001 dm | 81000 pg | 6.00 L |
| 0.0021km | 0.420 g | 92.00 cm | 781 m |

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| **Adding & Subtracting Sig Fig Rules** 5.00 cm- 4.352 cm  0.648 cm =**0.65 cm**  0.648 cm =**0.65 cm**1. add or subtract the numbers
2. keep all whole numbers
3. round the decimal to the **least number** of **decimal** places
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|  |
| **4. Determine the answer in terms of sig figs:**  |
|  43.8316 sec-29.5706 sec |  0.0677 mL 48.1 mL+82.7655 mL |  27.34 km 6.90 km+13.124 km |  2.8023 grams-4.762 grams |
|  334.540 grams + 198.9916 grams | 248.01010 kilograms +84.097 kilograms |  0.0610 m – 0.18 m |  50.2 miles– 0.500 miles |
|  0.04216 days- 0.0004134 days |  23.1 hours+ 4.77 hours+ 125.39 hours + 3.581 hours |  3.461728 grams+ 14.91 grams+ 0.980001 grams+ 5.2631 grams |  349.0 cm + 1.10 cm + 100. cm  |
|  |
| **Multiplying & Dividing Sig Fig Rules**6.7 cm x 1.1 cm= 7.37 cm2 = **7.4 cm2** 1. multiply or divide # s
2. count the TOTAL number of sig figs in each
3. Round to the least # of TOTAL sig figs
 |
|  |
| 5. Determine the answer in terms of sig figs: |
| 2.61 x 106 joules  0.0034 seconds | 24.1 miles0.005 hour | 34 grams 10.1 mL | 252 meters 910 seconds |
| 0.0222 mm x 0.7000mm x 8.702mm | 0.32cm x 14.50cm x 120cm | 1.80m x 25.3m |
| 1010 cm x 3001cm x 216 cm | 6.450dm x 1.010dm | 0.61mm x 42.1mm  |
|  |
| 6. Determine the answer in terms of sig figs: |
|  (320. - 22.7) x 3.8 |  (1.80 x 3.4) + 32.00 |  (1.80 x 25.3) + 32 |
|  (6.8 + 4.701) ­ (21.25 - 18) |  (3.65 x 2.10) (2.1134 x 42.1) | (14.86 + 13.7) x (65.346 - 4.10) (43.888 - 32.888) |
| Average the following masses: 0.621g, 1.614g, 0.08456g, 0.4g |