

# Sig Figs & DA Extra

Name Key  
 Period \_\_\_\_\_ Date \_\_\_\_\_

1. How many significant figures are in the following measurements?

- |                  |          |                         |   |
|------------------|----------|-------------------------|---|
| a. 20 hairs      | $\infty$ | e. 9.0 sec.             | 2 |
| b. 24300. joules | 5        | f. $6.30 \times 10^4$ g | 3 |
| c. 210 g         | 2        | g. 10.090 m             | 5 |
| d. 0.0005 L      | 1        | h. 0.002300 g           | 4 |

2. Solve the following conversion problems

a. How many meters are there in 213 yards? (1 meter = 1.09361 yards)

*desired units* *start with*

$$\frac{m}{213 \text{ yd}} \times \frac{1 \text{ m}}{1.09361 \text{ yd}} = 194.768 \rightarrow \boxed{195 \text{ m}}$$

b. A certain sports drink contains 125 mg of sodium per 350 mL serving. What is this in ounces per Liter? (1 gram = 0.035274 oz)

$$\frac{\text{oz}}{L} \times \frac{125 \text{ mg}}{350 \text{ mL}} \times \frac{1000 \text{ mL}}{1 \text{ L}} \times \frac{1 \text{ g}}{1000 \text{ mg}} \times \frac{0.035274 \text{ oz}}{1 \text{ g}} = .012598 \rightarrow \boxed{.013 \text{ oz/L}}$$

c. Mrs. Sjuts runs the 400. meter dash in 1 minute 7 seconds. How fast is this in miles/hour? (1 mile = 1.609 kilometers) ( $1.609 \text{ km} = 1,609 \text{ m}$ )

$$\frac{\text{mi}}{\text{hr}} \times \frac{400. \text{ m}}{67 \text{ s}} \times \frac{3600 \text{ s}}{1 \text{ hr}} \times \frac{1 \text{ mi}}{1,609 \text{ m}} = 13.357 \rightarrow \boxed{13 \text{ mi/hr}}$$

d. The speed of light is  $3 \times 10^8$  meters/second. How fast is this in miles/hour? (1 mile = 1.609 kilometers)

$$\frac{\text{mi}}{\text{hr}} \times \frac{3 \times 10^8 \text{ m}}{\text{s}} \times \frac{3600 \text{ s}}{1 \text{ hr}} \times \frac{1 \text{ mi}}{1609 \text{ m}} = 6.712 \times 10^8 \rightarrow \boxed{7 \times 10^8 \text{ mi/hr}}$$