

Name: _____
Class Period: _____

Honors Physics: Math Skills
Part II

Metric Conversions/Dimensional Analysis

Convert the following. Please show your work in the space provided. You may need to look up some of the conversion factors.

1.) 50 mi/hr = _____ km/hr

2.) 65 mm = _____ km

3.) 25 m = _____ cm

4.) 150 lbs = _____ kg

5.) 30 mi/hr = _____ m/s

Metric Prefixes (1 pt. each)

Fill in the appropriate metric prefix

Ex: $3.26 \times 10^{-12} \text{ g} = 3.26 \text{ picograms}$

6.) $4 \times 10^{-6} \text{ m} = 4 \text{ _____}$

7.) $5.96 \times 10^{-9} \text{ m} = 5.96 \text{ _____}$

8.) $3.16 \times 10^3 \text{ g} = 3.16 \text{ _____}$

9.) $9 \times 10^{-2} \text{ m} = 9 \text{ _____}$

10.) $7.2 \times 10^6 \text{ g} = 7.2 \text{ _____}$

Fill in the appropriate scientific notation

Ex: $7.4 \text{ dg} = 7.4 \times 10^{-1} \text{ grams}$

11.) $6.24 \text{ pg} = \text{_____ g}$

12.) $5.12 \text{ } \mu\text{m} = \text{_____ m}$

13.) $1.002 \text{ ng} = \text{_____ g}$

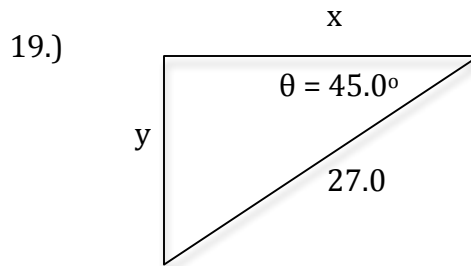
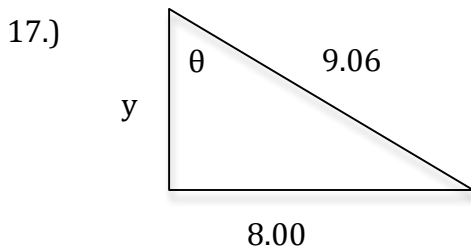
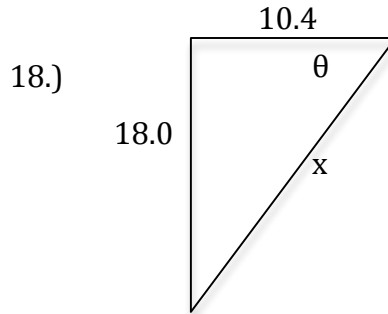
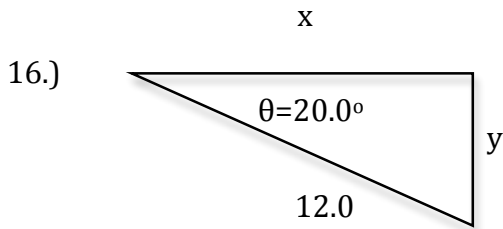
14.) $6.5 \text{ cm} = \text{_____ m}$

15.) $3.3 \text{ mm} = \text{_____ m}$

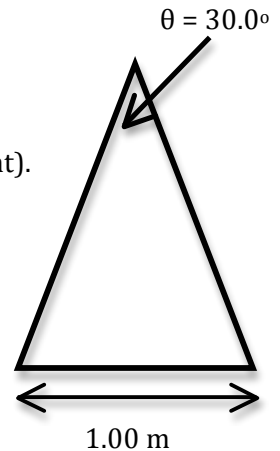
Trigonometry Review

***Even though answers are evaluated through your calculator, please write down the formula used. Remember to change your calculate mode to degrees.**

Assume the 4 triangles below are right triangles. Solve for any missing variables (x, y, or θ)



20. The silhouette of a Christmas tree is an **isosceles** triangle (See figure to the right). The angle at the top of the triangle is 30.0° and the base measures 1.0 m across. How tall is the tree?



21. A hiker is hiking up a slope that makes an angle of 12.0° with the ground. He hikes at an **average velocity** of 1.33 m/s for 5.00 hours. What is the vertical altitude that he has gained, aka, find the value of the height (H). *Express your answer in SI Units.

