Name_____

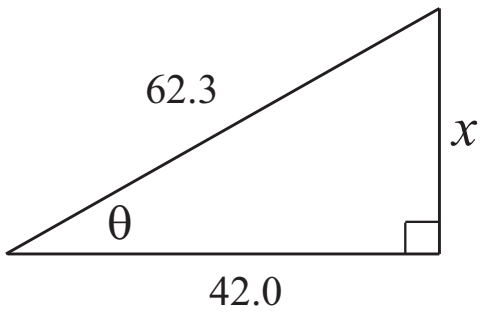
Phys 2010 (NSCC), Fall 2006
Problem Set #1

1. One acre is equal to 4840 square yards. Convert this to square meters. (You can use 1 yd = 3 ft and 1 ft = 0.3058 m.)

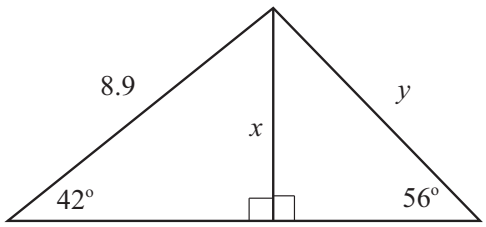
2. Convert $3.30\ \frac{\text{g}}{\text{cm}}$ to units of $\frac{\text{kg}}{\text{m}}$.

3. Find the volume of a sphere which has a *diameter* of 8.40 cm. Express the answer in units of m^3. (For a sphere, the volume is given by $V = \frac{4}{3}\pi R^3$.)

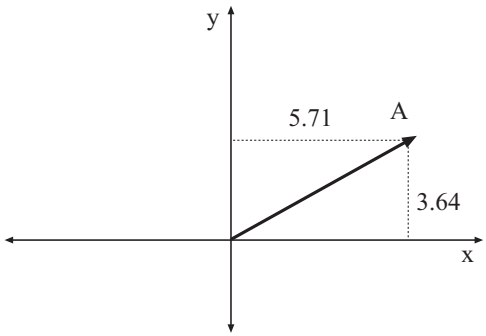
4. For the right triangle at the right, find the angle θ and the missing side x.



5. Find the missing sides x and y.

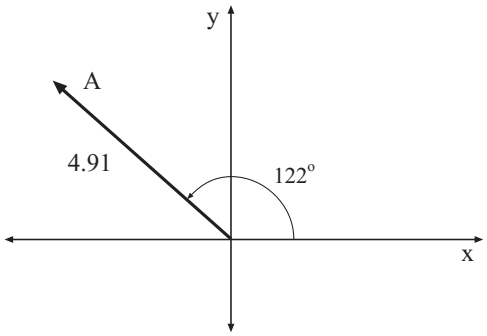


6. The vector **A** has the x and y components shown at the right. Find the magnitude and direction of **A**.



7. The vector **A** has magnitude 4.91 and points at an angle of 122° (measured from the x axis).

Find the cartesian (rectangular) components of **A**



8. Find the magnitude and direction of the sum of the two vectors shown at the right.