Quiz #1B

Clearly indicate (with a box) your answers to the following questions. SHOW ALL WORK.

1. Convert 35 meters/sec into miles/hour.

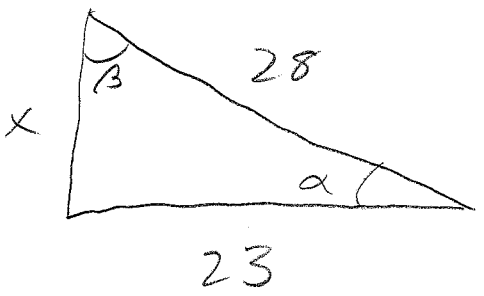
$$35\ \frac{m}{s} \cdot \frac{1\ mi}{1609\ m} \cdot \frac{3600\ s}{1\ hr} = \boxed{78\ mi/hr}$$

2. A building measures 15 feet x 18 feet x 11 feet. Find the volume of the building in...
a) Cubic meters
b) Liters

$$15 \times 18 \times 11 = 2970\ ft^3 \cdot \frac{1\ m^3}{3.281^3\ ft^3} = \boxed{84\ m^3}$$

b) $$84\ m^3 \cdot \frac{10^6\ cm^3}{1\ m^3} \cdot \frac{1\ L}{10^3\ cm^3} = \boxed{84000\ L}$$

3. Draw a right triangle for which the hypotenuse is 28 and one leg measures 23. Find the length of the other leg and also find the two interior angles in the triangle (besides the 90° angle).



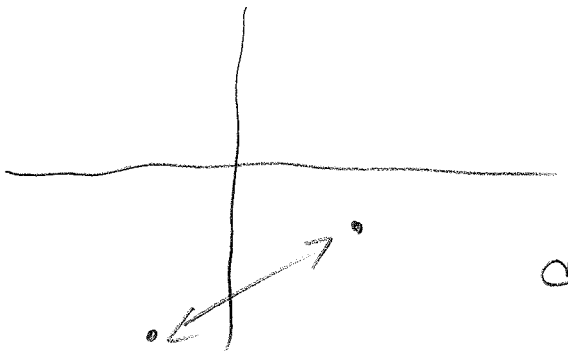
$x^2 = 28^2 - 23^2$

$\boxed{x = 16}$

$\alpha = \cos^{-1}\left(\frac{23}{28}\right) = 35^\circ$

$\beta = \sin^{-1}\left(\frac{23}{28}\right) = 55^\circ$

4. Find the distance between the points (4.0, -2.0) and (-2.0, -5.0).



$\Delta x = 4 - (-2) = 6$

$\Delta y = -2 - (-5) = 3$

$d = \sqrt{6^2 + 3^2}$

$= \boxed{6.7}$