

General Biology 2  
Spring 2008

### Problem Set – Cardiac Output

**Given:** The total CO<sub>2</sub> content of blood in the right atrium = 54 ml CO<sub>2</sub>/ dL blood  
The total CO<sub>2</sub> content of blood in any systemic artery = 49 ml CO<sub>2</sub> / dL blood

Note: a dL is a deciliter – look it up if you don't know what it is.

$$\dot{V}_{\text{CO}_2} = 200 \text{ ml CO}_2 \text{ min}^{-1}$$

heart rate = 60 beats min<sup>-1</sup>

1. FIND:  
Cardiac output in liters:

Average Stroke Volume in mL:

2. If the heart rate doubled but demand for O<sub>2</sub> and CO<sub>2</sub> elimination remained the same, what would happen to stroke volume if blood gas concentrations remained steady? (a few words will suffice)