The Cardiovascular System: Cardiac Output

1. Define Cardiac Output (CO).

2. Write the equation for CO.

3. Define Stroke Volume (SV).

4. Write the equation for SV.

5. Write the normal values (include correct units) for the following:

   a. HR (heart rate) = _____

   b. SV (stroke volume) = _____

   c. EDV (end diastolic volume) = _____

   d. ESV (end systolic volume) = _____

6. Given the values for HR and SV, calculate cardiac output:

   CO =

7. Explain how the following factors affect HR, SV, and CO by placing arrows (↑, ↓, or ↔ for no change) under them.

	HR	SV	CO
a. ↑ SNS	____	____	____
b. ↑Venous return	____	____	____
c. Exercise	____	____	____

d. ↑ Calcium ____ ____ ____

e. ↓ HR ____ ____ ____

8. Why would stroke volume increase with an increase in the sympathetic nervous system or an increase in calcium?

9. Why would stroke volume increase when heart rate slows down?

10. If stroke volume is 75 ml/beat and heart rate is 80 beats/min, how many of

the soda bottles would equal the correct volume (from the quiz)? _____