NAME _____ LAB TIME/DATE _____

REVIEW SHEET
exercise
6

Cardiovascular Physiology

1. Define each of the following terms:

- autorhymicity _____
- sinoatrial node _____
- pacemaker cells _____
- vagus nerves _____

2. The sympathetic nervous system releases the neurotransmitter _____ .

3. The parasympathetic nervous system releases the neurotransmitter _____ .

4. Circle the correct boldfaced term.

The sympathetic nervous system **increases** / **decreases** heart rate.

The parasympathetic nervous system **increases** / **decreases** heart rate.

5. What happens in each of the five phases of cardiac muscle depolarization?

Phase 0: _____

_____

Phase 1: _____

_____

Phase 2: _____

_____

Phase 3: _____

_____

Phase 4: _____

_____

6. Explain why the SA node generates action potentials at a frequency of approximately 100 beats per minute even though the average resting heart rate is 70 beats per minute.

_____

_____

7. What are two key differences between cardiac muscle and skeletal muscle?

8. What is the difference between the effective refractory period and the relative refractory period?

9. When the heart is externally stimulated just after the start of the contraction cycle, why does this have no affect on heart rate?

10. What is the action of each of the following factors on heart rate?

epinephrine: _____

pilocarpine: _____

atropine: _____

digitalis: _____

temperature: _____

11. How do a frog heart and a human heart differ in their responses to temperature? Why?

12. What is the action of each of the following ions on heart rate?

Calcium: _____

Sodium: _____

Potassium: _____