Biology 360: Motor Behaviors and Review

1) What is a central pattern generator and describe one example that was discussed in class?

2) You have a dog named Sparky. When you scratch him in the right spot on his back, Sparky immediately lifts his leg up and starts scratching. When you stop, he puts his leg down. Which example of motor behaviors is he exhibiting and why? Describe a simple experiment to test this.

3) You are at an aquarium admiring the red belly of the red-bellied stickleback fish when an employee tells you it is their mating season. You notice the males are swimming around normally in the tank, but as soon as they see another red-bellied stickleback fish, they immediately attack the other male until it retreats. These behaviors are not directed at any other male fish in the aquarium. After a few minutes you see the male red-bellied stickleback fish attacking a red plant. Which example of motor behaviors are these fish exhibiting and why? Describe a simple experiment to test this.
4) Describe what would happen in cell 1 if an object touched the outer surface of the skin.

5) The connection between cell 1 and cell 2a is called? __________

6) What happens in this region?

7) What type of cells are 3a, 3b, and 3c? __________________________

8) What occurs when an action potential reaches the terminal of all three cells described in 7? What will occur in the postsynaptic cell?

9) Assume the above circuit is involved in a reflexive behavior. What criteria must be met in order for this to be a reflexive behavior?