Name: Date: Period:

**Calculating Time of Death using Algor Mortis**

Working in pairs, answer the following questions using this information:

 For the first 12 hours, the body loses 0.78°C (1.4°F) per hour.

 After the first 12 hours, the body loses about 0.39°C (0.7°F) per hour.

 **Temperature loss = rate x time**

Be aware of conditional factors and how those might logically affect the rate of loss.

**PART A**

Case 1: An elderly man is found deceased in his apartment. His body temperature is 33.1°C (91.6°F).

Case 2: A body found outside in the winter has a temperature of 33.1°C. Has the body been dead a longer or shorter time than Case 1? Explain your answer.

Case 3: Approximately how long has the victim been dead if his body temperature was 25.9°C (85.2°F)?

Case 4: What is the approximate time of death if the body temperature was 10°C (50°F)?

**PART B**

Describe the impact on time of death for each of the variables listed below. Would you increase or reduce your approximate time of death if the body had been:

1. Naked
2. Exposed to windy conditions
3. Suffering from an illness prior to death
4. Submerged in a lake

**PART C**

Case 5: A woman is found dead on a boat floating in the middle of a lake at 4:30am. There is blunt force trauma to her head but no other discernable damage. She is approximately 30 pounds overweight. She is wearing thermal clothing and a winter jacket, gloves, and hat. Climatological data indicate it was a clear, cold, and windy night with no precipitation. Calculate the time of death based only on a body temperature of 15.6°C (60.8°F)? Now consider the other factors presented. How would each affect this estimation?

Case 6: A woman is found dead in a stream at the bottom of a ravine. The cause of death is determined to be a fall from a nearby cliff. Mechanism of death is exsanguination (there was virtually no blood left in her body). What is the approximate time of death if the body temperature was 29.4°C (84.9°F)? Will any other factors influence the time of death and how so? Explain your answers.

Case 7: A young man is found dead in his fraternity house at 7pm. He is naked and there are signs of recent hazing including bruising on his wrists, ankles, and neck. His blood alcohol level is three times the legal limit and his stomach contents reveal large amounts of undigested alcohol. His trachea is scratched and bloody. His body is found on the concrete floor of the basement. What is the approximate time of death if the body temperature was 24°C (75°F)? Will any other factors influence the time of death and how so? Explain your answers.

Case 8: A man’s body is found in a locked car which was left idling in his garage. The car was running and the heat was left on. He is found in only a bathrobe. It is mid-January and the exterior temperature is near freezing. His body temperature was found to be 32.2°C (90°F). Calculate the time of death based only on a body temperature. Now consider the other factors presented. Would any affect this estimation? If so, how?