Name: Date:

**Calculating Time of Death Using Algor Mortis**

Directions: 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.**

**Living Body Temperature: 37°C or 98.6°F**

Example: What is the temperature loss for someone who has been dead for 12 hours?

Temperature loss = (0.78®C/hour) x 12 hours = 9.36®C

1. Now you try. What is the temperature loss of someone who has been dead 5 hours?
2. What should their body temperature be?
3. What is the temperature loss of someone who has been dead for 15 hours? Show your work!
4. What would their body temperature be?
5. For each of the following, state if the body had been dead for more than or less than 12 hours based on the number of degrees lost:
   1. Total loss of 7.9° C: \_\_\_\_\_\_\_\_\_\_\_\_
   2. Total loss of 4.4°C: \_\_\_\_\_\_\_\_\_\_\_\_
   3. Total loss of 11.7°C: \_\_\_\_\_\_\_\_\_\_\_
   4. Total loss of 17.2°C: \_\_\_\_\_\_\_\_\_\_\_\_
   5. Total loss of 10.6°C:\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Calculate the time of death if the person was dead for more than 12 hours and their current body temperature was given as 72°F.
   1. Total degrees lost from time of death until body found assuming person does not have a fever:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. How much longer than 12 hours was the person dead for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. How many total hours has the person been dead for?

**Calculating Time of Death Using Rigor Mortis**

Background: In old detective movies, a dead body was often referred to as a “stiff.” The term refers to the onset of rigor mortis that follows soon after death. In this activity, you will estimate the approximate time of death by analyzing the degree of rigor of the deceased body.

Directions: In pairs, answer the following questions dealing with approximating the time of death based on rigor mortis evidence. Refer to the Rigor Mortis Reference Table provided to you.

Questions:

**Part A**

Estimate the approximate time of death for the following situations. Explain each of your answers.

1. A body was found with no evidence of rigor. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. A body was found exhibiting rigor throughout the entire body. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. A body was found exhibiting rigor in the chest, arms, face, and neck. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. A body was discovered with rigor present in the legs, but no rigor in the upper torso. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. A body was discovered with most muscles relaxed, except for the face.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part B**

Estimate the time of death based on the following information.

1. A frail, elderly woman’s body was found in her apartment on a hot summer’s evening. Her body exhibited advanced rigor in all places except her face and neck. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. A body was discovered in the woods. The man had been missing for two days. The average temperature the past 48 hours was 50 degrees Fahrenheit. When the body was discovered, it was at peak rigor. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. An obese man was discovered in his air-conditioned hotel room sitting in a chair in front of the television. The air conditioner was set for 65 degrees Fahrenheit. When the coroner arrived, the man’s body exhibited rigor in the upper body only. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. The victim’s body is not rigid. How long has she been dead? Explain your answer.
5. The body is completely stiff. How long has he been dead? Explain your answer.
6. The victim was found in a snowbank alongside a road. His body is rigid. How long has he been dead? Explain your answer, remember the cold temperature.
7. The body of the runner was found in the park one early, hot summer morning. Her body shows rigor in her face, neck, arms, and torso. How long has she been dead? Explain your answer.