1. The manager of a university computing help line is trying to decide whether to hire additional staff. She has decided to hire if there is evidence that the average time callers to the help line must wait on hold before receiving assistance is greater than 5 minutes. She collects data in order to test $H_0 : \mu = 5$ versus $H_a : \mu > 5$ where μ represents the mean time on hold. From the caller's perspective, which type of error would be more serious?

   (a) Type I error
   (b) Type 2 error
   (c) Both types of errors would be equally serious.

2. Medical researchers now believe there may be a link between baldness and heart attacks in men. What would constitute a Type I error in this situation?

   (a) Baldness does indicate an increased risk of heart attacks, but medical researchers conclude that it does not.
   (b) There is no link between baldness and heart attacks, but medical researchers claim that there is.
   (c) Baldness and heart attacks are not linked, and this is correctly claimed by researchers.

3. Pregnancy tests are not 100% correct. Suppose a women thinks she may be pregnant, so she takes a pregnancy test. What represents a Type 2 error in this situation?

   (a) She is pregnant and the test shows "negative".
   (b) She is pregnant and the test displays "positive."
   (c) She is not pregnant but the test shows "negative."
   (d) She is not pregnant and the test shows "positive."

4. Suppose you are tested to determine whether or not you have a certain disease. Which of the following could be a consequence of a Type 1 error?

   (a) You do not receive treatment for the disease when you actually have it, leading you to get more sick and infect others.
   (b) You are told you have the disease when you do not, leading you to be unnecessarily concerned about your health and undergoing unnecessary treatments with potential adverse side effects.