

Real
Life
PS

17. Crime-scene investigators collected hair from a dead person's body. One of the first things that needs to be established is if this hair is human or animal. Describe two ways that animal hair differs from human hair.

18. The body of a woman was found in the woods. Some hair fibers found on the body were sent to the crime lab for analysis. The ends of the hair attached to the body were gray, but the tips of the hair showed that it had been dyed. The distance from the root of the hair to the beginning of the dyed area measured 8 mm. Investigators determined that the victim's hair had last been dyed on August 1, 2004. Assuming the hair grows at the rate of 0.44 mm per day, on approximately what date did the woman die? Explain your answer.

19. Calculate the medullary index of a hair whose diameter is 110 microns wide and whose medulla measures 58 microns. Is this a human or animal hair?

FYI:
Medullary
Index is the
ratio of the diameter
of the medulla
to the entire
hair!

20. A woman with long hair is a suspect in a burglary case. At the crime scene, several long hairs were found attached to a broken lock of the safe. The police obtain a warrant and request a sample of 25 to 50 hairs from this woman. They tell the woman it is important that they pull the hairs from her head rather than to merely cut the hairs. The police suspect that the woman was stealing to help support a drug habit.
- Why is it important that the police pull the hairs from her head rather than cut her hair?
 - Why is it necessary to obtain 25 to 50 hairs from this woman?
 - The woman denies that she is currently taking drugs and states that she stopped using drugs a year ago. Explain how the police can determine if the woman has been off drugs for over one year.
 - Suppose the hairs of the woman match the hairs found at the crime scene. Why does this not necessarily prove that she was the guilty party?