

Math 235 Fall 2000
Weekend Puzzles #2

The following puzzles are for your enjoyment only. I will never ask questions like these on quizzes or tests. You may do them or not do them as you see fit. Answers to these puzzles will be given on the next Weekend Puzzle sheet.

This week's puzzles are classics. Some people have told me that they've been asked these questions on job interviews! You don't need to go outside the parameters of these problems to find the solutions; in other words, they aren't "trick" questions. For example, the farmer in #1 can't hire another boat or find a bridge across the river; in #2, the members of Run-D.M.C. can't throw the flashlight across the bridge (someone has to bring it back).

1. Farmer Bob needs to transport a chicken, a fox, and a bag of grain across a river. He can only take one thing in the boat with him at a time. The problem is, if the chicken and the fox are left alone, the fox will eat the chicken; and if the grain and the chicken are left alone, the chicken will eat the grain. How can Bob get the chicken, the fox, and the bag of grain safely across the river?

2. Run-D.M.C. is on tour and trying to get to their next show on time. They have only 17 minutes to cross a bridge to the stadium, but it's dark and they only have one flashlight. What's worse, the bridge is rickety and will only hold two people at a time. Run, being in the best shape, can cross the bridge in one minute. D.M.C. takes two minutes to cross the bridge. Jam Master Jay can cross the bridge in 5 minutes. Their tour manager Norman has a slight limp and needs 10 minutes to cross the bridge. When two people are on the bridge they can only move as fast as the slowest person, since they need to stay near the flashlight. How can Run, D.M.C., Jam Master Jay, and Norman cross the bridge in time?

Answers to last week's puzzles: (1) Allison is a knight, Bo is a knave. (2) The answers are the same in every case. (3) The person you asked is a knave, the other person is a knight. You need to use that fact that you knew the answer when the person replied; if he had said "yes", you couldn't have known the answer, so he must have said "no." (4) Arthur is a knave, Betsy is normal, Carl is a knight.