

Homework 3

Do the problems on webwork and turn the following problems in class on Feb. 15th.

Homework should be written neatly and clearly explained. If it requires more than one sheet, the sheets must be stapled. Include your name and id number in the top right corner of your homework.

Problem 1. A transmitter sends a binary signal (a 0 or 1), which might be corrupted and not correctly received by a receiver. The probability that a 0 is correctly received is 0.9, and the probability that a 1 is correctly received is 0.95.

If each digit is a 1 or a 0 with equal probability, then given that a 1 is received, what is the probability that this is a correct reading?

Problem 2. You have a collection of 15 phones, 4 of which are broken. You inspect 9 of them.

(a) What is the probability 2 are broken?

(b) Given that 2 are broken, what is the probability the first is broken?