

Quiz 3

October 29

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1. An electronic message which is sent over a network is 2048 bits long.
 - (a) Suppose that in transmission, exactly 5 bits of the original message are flipped. (When a bit is flipped, if it was a 0, it becomes a 1, and if it was a 1, it becomes a 0). Given this information and the original message, how many possibilities are there for the contents of the message which is received at the other end?

 - (b) Suppose that two bits are flipped out of the first 1024 bytes of the message and three bits are flipped out of the second 1024 bytes of the message. Now how many possibilities are there for the contents of the transmitted message?

2. Sam's mom is buying 20 balloons for his birthday party.
 - (a) If the balloons come in seven different colors, how many different ways are there for her to select the balloons? For example, one possible choice would be 5 red, 6 green and 9 yellow.

 - (b) Since Sam's favorite color is blue, his mom decides to have at least 10 of the 20 balloons be blue. Now how many orders are possible?