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**Chapter 3 Transport Layer**

**Homework 4** (Show all work)

1. UDP and TCP use 1s complement for their checksums. Suppose you have the following 3 8-bit bytes. 11011010, 10101000, 11011011. What is the 1s complement of the sum of these 8-bit bytes?

00100101

01010111

00100100

1. **Compute the 1s complement of the sum of 10111011 and 11001100.**

10111011

+11001100

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10001000

1’s complement = 01110111

1. **Compute the 1s complement of the sum of 10111011 and 00110101.**

10111011

+00110101

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11110000

1’s complement = 00001111

1. **Compute the 1s complement of the sum of 11110011 and 11000001.**

11110011

+11000001

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10110101

1’s complement = 01001010

1. **Is it possible that a 1 bit error will go undetected with a 1s complement checksum?**
2. **Give an example of 2 separate 1 bit errors that will not be detected with a 1s complement checksum.**