

AME 3623: Quiz 1

Solution Set

February 27, 2005

Question 1: Logic Components

1. **Give the logic table for a 2-input mux (multiplexer).**

A 2-input mux has two data inputs and one control input.

D0	D1	S	Output
0	0	0	0
1	0	0	1
0	1	0	0
1	1	0	1
0	0	1	0
1	0	1	0
0	1	1	1
1	1	1	1

2. **What is the importance of a tristate logic gate?**

With a tristate gate, we can drive a line high, low, or not at all. This type of device is useful for situations such as multiple devices that may drive a common bus (but at different times).

Question 2: Number Representations

Given the following number: $0x52$?

1. What is the binary equivalent?

01010010

2. What is the binary representation for the 2's complement?

10101110

3. What is the binary representation of the result of adding this complemented number to $0x63$? 00010001

4. What is the decimal equivalent of this result? 17