

Part 1:

These are the values returned by the function Bars given the following values.

1000 = 1111

1001 = 1112

1002 = 1113

1003 = 1114

1004 = 1115

1005 = 1116

1006 = 1117

1007 = 1118

1008 = 1119

1009 = 1121

Part 2:

These are the values returned by the function Bars (this time using a loop) given the following values.

1000 = 1111

1001 = 1112

1002 = 1113

1003 = 1114

1004 = 1115

1005 = 1116

1006 = 1117

1007 = 1118

1008 = 1119

1009 = 1121

Part 3:

This is the new formula I developed for Bars.

$$\text{OutputValue} = (1 + ((\text{inputValue} - 10 + 1) * 10)) / 5$$

This formula was not correct for when $n = 0$

Part 4:

1. The function AvgCost is monotonically decreasing.
2. $\text{AvgCost}(n) > \text{AvgVost}(n + 9)$ is always true.
3. As n increases, the value returned by AvgCost decreases slightly.
4. The value of c is 0.9.
5. 110
6. 1100
7. The reason why 0.9 is the average cost is due to it being the actual cost of the bar after it has been produced in the factory.

Part 5:

I think a fair dollar amount for the coupon would be around \$0.5. The kid seems to have been ripped off and ended up paying more than what the bar is worth.