Section-3

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1 Utilities

1, 2, 3. Just plug in values. L(.) are lotteries that return the expected values of their rewards. U(L(.)) can be computed easily.

4. Since U(L(a, x; b, y)) = a.U(x) + b.U(y), any quantity with a positive second derivative will be greater than U(a.x + b.y) = U(EMV(L)) when a, b $<$ 1. Similarly, they will be equal for a monotonic U and U(L) will be less than U(EMV(L)) for a declining U.

2 Micro-Blackjack

1. Transition function T(s, a, s'):

T(0, Draw, s) = 1/3 for s $\in \{2, 3, 4\}$

T(2, Draw, s) = 1/3 for s $\in \{4, 5, \mathit{Done}\}$