

## *Part A, The Question*

*Calculate the certainty equivalent of the prospect (0.2, 40; 0.6, 50; 0.2, 30), under:*

a) Expected utility theory with the utility function  $u(x) = (x/10)$ , with total wealth = 0.

b) Rank dependent utility with the utility function  $u(x) = (x/10)$  and  $w(p) = (p^2)$ , with total wealth = 0.

a)

$$U(X) = X/10, TW=0.$$

$$EU(L) = \sum(p)U(x_i)$$

$$EU(L) = (0.2 * (40/10)) + (0.6 * (50/10)) + (0.2 * (30/10)) = \mathbf{4.4}$$

So, the certainty equivalent under Expected Utility Theory =  $(4.4 * 10) =$   
**44**

$$(4.4 * 10) = \mathbf{44}$$

b)

$$U(X) = (x/10), TW=0, W(p) = (p^2)$$

$$RDU(L) = \sum(p)U(x_i)$$

$$RDU(L) = [w(0.6) - w(0)] * U(50) + [w(0.8) - w(0.6)] * U(40) + [w(1) - w(0.8)] * U(30) \\ =$$

$$0.36 * 5 + 0.28 * 4 + 0.36 * 3 = \mathbf{4}$$

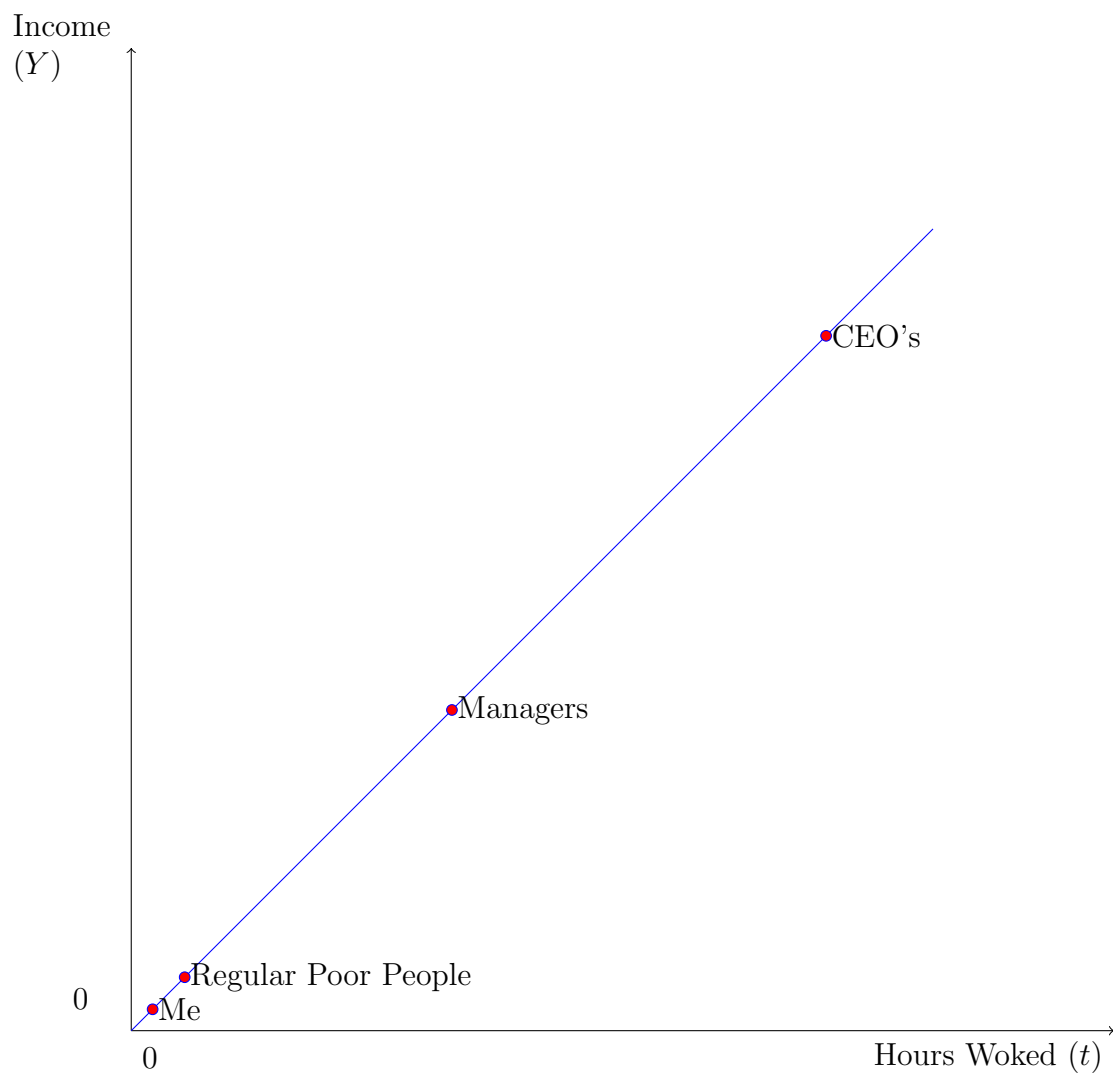
So, the certainty equivalent under Rank Dependent Utility Theory =

$$(4 * 10) = \mathbf{40}$$

### ***Part B, The Graph***

I have miscalculated the option to include a graph with the question above. The equation does not match a graph and is not meant to be included in a graph.

Nevertheless, I want to include a graph in my presentation.



### ***Part C, Conclusion***



*This assignment was very interesting and a lot of fun! Too bad for Github. Github simply does not cooperate.*

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