Department of Economics, University of California, Davis

Ecn 106 – Decision Making – Professor Giacomo Bonanno

HOMEWORK # 3 (for due date see web page)

Ann and Bob face the following decision problem, where the probabilities are their initial beliefs

probability	$\frac{1}{6}$	$\frac{3}{6}$	$\frac{2}{6}$
state $\rightarrow$	s_1	s_2	s_3
act $\downarrow$			
A	\$25	\$100	\$16
B	\$64	\$81	\$9
C	\$4	\$36	\$49

Ann is risk neutral, while Bob's von Neumann-Morgenstern utility-of-money function is $U(\$m) = \sqrt{m}$ and his initial wealth is zero.

(a) What act will **Ann** choose?

(b) Find Ann's **normalized** von Neumann-Morgenstern utility function.

(c) What act will **Bob** choose?

(d) Suppose that **Ann** is offered the option of consulting an expert who will be able to provide her with perfect information concerning the true state (that is, she will be told what the state is before she makes her decision). What is the maximum price that she would be willing to pay for perfect information?

(e) Suppose that Bob is offered the option of consulting an expert who will be able to provide him with perfect information concerning the true state. The expert charges \$19 for her services. Is **Bob** willing to hire the expert?

(f) Calculate, **from the initial point of view** (that is, before the information is obtained), the change in expected utility that **Ann** obtains by agreeing to consult the expert if the expert charges \$19 for her services.

(g) Write down an equation for **Bob**, whose solution would give the maximum amount that Bob would be willing to pay for perfect information.