

BAYLOR UNIVERSITY
HANKAMER SCHOOL OF BUSINESS
DEPARTMENT OF FINANCE, INSURANCE & REAL ESTATE

Risk Management
Problem Set #5
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Name: _____

Assume a consumer has initial wealth of \$80,000, utility of wealth $U(W) = \sqrt{W}$, and her wealth is subject to the following loss distribution:

Loss Amount (L_s)	Probability (p_s)
\$0	50%
\$10,000	30%
\$60,000	20%

- A. Determine the expected utility of wealth, assuming the consumer is uninsured.
- B. Calculate the actuarially fair price for a full (100%) coverage insurance policy.
- C. Show that it is optimal for this consumer to purchase a full coverage insurance policy at its actuarially fair price by comparing expected utility in the absence of insurance with expected utility in the presence of insurance.
- D. If only full coverage insurance policies are available in the market, what is the maximum price that this consumer is willing to pay for such a policy?

E. Suppose this consumer may choose one of the following four risk management strategies:

- 1) Policy A fully covers all losses for a price of \$18,000;
- 2) Policy B has a \$8,000 deductible and costs \$13,200;
- 3) Policy C covers 80% of all losses for a price of \$14,400; and
- 4) Self-insure.

Which of these four strategies will this consumer choose? Explain why.