HOMEWORK # 1 ANSWERS

(a) No insurance is represented by the lottery $\begin{pmatrix} \$360,000 & \$240,000 \\ \frac{9}{10} & \frac{1}{10} \end{pmatrix}$. The expected wealth is the expected value of this lottery, namely $\frac{9}{10}360,000+\frac{1}{10}240,000=348,000$.

(b) The expected loss is $\frac{9}{10}0+\frac{1}{10}(360,000-240,000)=\$12,000.$

(c) $h_A=2,000$, $D_A=30,000$.

(d) $h_B=3,500$, $D_B=19,000$.

(e) $h_C=14,000$, $D_C=0$.

(f) $2,000-\frac{1}{10}90,000=-7,000.$

(g) $3,500-\frac{1}{10}101,000=-6,600.$

(h) $14,000-\frac{1}{10}120,000=2,000.$

(i) Contact C gives him a lower expected wealth (namely \$346,000) than no insurance. Thus any risk neutral and any risk-loving person would prefer not to insure. Only a risk-averse person might consider buying contract *C*.

(j) D is contract with zero deductible and a premium of \$12,000.