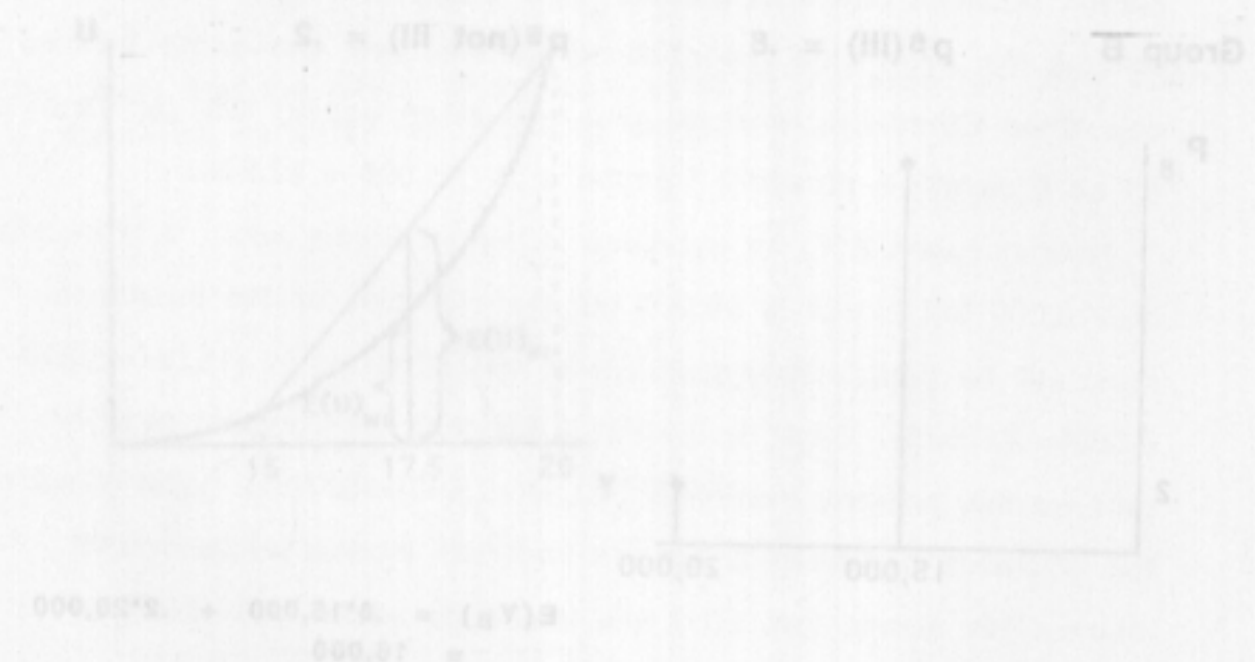
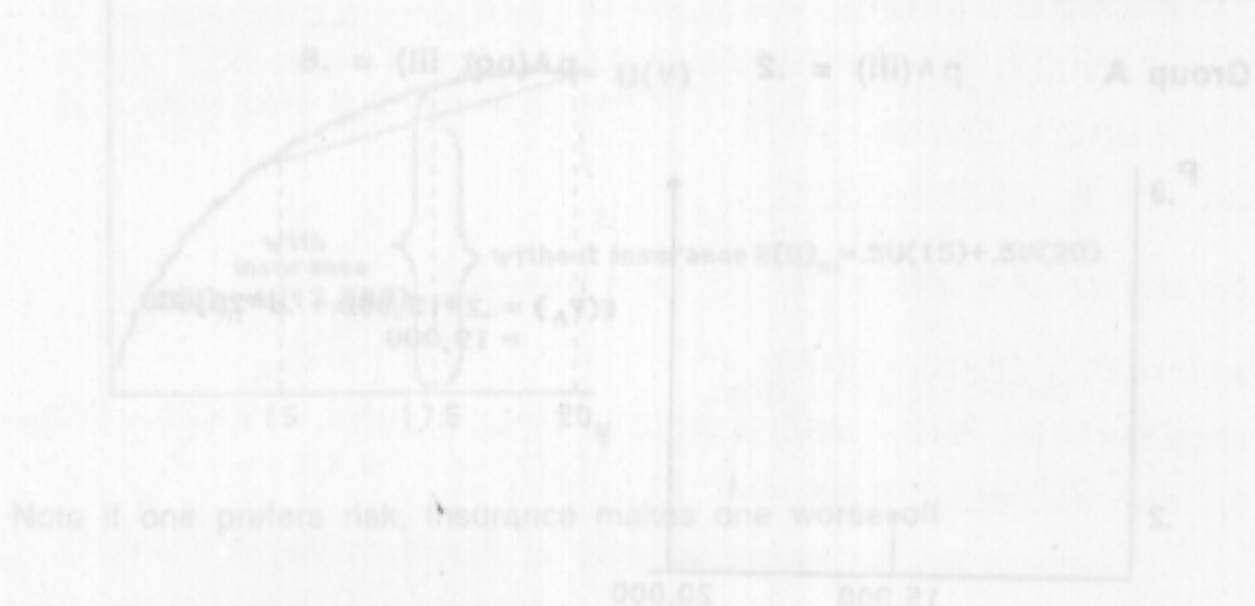


Therefore, for the combined group an actuarially fair premium will again be \$2,500.

Suppose there are distinct groups in the population having different risk of illness.



Group A

$U(y)$

y

U

$E(U_A) = 0.5 \cdot U(25,000) + 0.5 \cdot U(0) = 0.5 \cdot 20 + 0.5 \cdot 0 = 10$

$E(Y_A) = 0.5 \cdot 25,000 + 0.5 \cdot 0 = 12,500$

Group B

$U(y)$

y

U

$E(U_B) = 0.5 \cdot U(25,000) + 0.5 \cdot U(0) = 0.5 \cdot 20 + 0.5 \cdot 0 = 10$

$E(Y_B) = 0.5 \cdot 25,000 + 0.5 \cdot 0 = 12,500$

Note that if the two groups are of equal size and they are combined

$U(y)$

y

U

$E(U_C) = 0.5 \cdot U(25,000) + 0.5 \cdot U(0) = 0.5 \cdot 20 + 0.5 \cdot 0 = 10$

$E(Y_C) = 0.5 \cdot 25,000 + 0.5 \cdot 0 = 12,500$