

Math of Life Ins Assignment Dec 13, 2011

Answer the following questions:

1-It is estimated that the following expenses will be incurred on a 25 year term insurance policy of \$60,000 issued to a person who is aged 70.

a-Commission: 40% of the first year gross premium, 20% of the second year gross premium, 5% of the third through the tenth year gross premium, 2% of all premiums collected thereafter.

b- Premium tax 6% of each gross premium.

c-Administrative expenses: \$200 in the first year, \$50 in each subsequent years as long as the insured is alive.

d-Cost of settlement is \$100.

Compute the gross annual premium.

2-It is estimated that the following expenses will be incurred on a 15 payment, 25 year term insurance policy of \$60,000 issued to a person who is aged 70.

a-Commission: 40% of the first year gross premium, 20% of the second year gross premium, 5% of the third through the tenth year gross premium, 2% of all premiums collected thereafter.

b- Premium tax 6% of each gross premium.

c-Administrative expenses: \$200 in the first year, \$50 in each subsequent years as long as the insured is alive.

d-Cost of settlement is \$100.

Compute the gross annual premium.

3-It is estimated that the following expenses will be incurred on a whole life insurance policy of \$250,000 issued to a person aged 70.

-Commission: 40% of the first year gross premium, 20% of the second year gross premium, 15% of the third through the ninth year gross premium, 10% of all premiums collected thereafter.

- Premium tax 6% of each gross premium.

-Administrative expenses: \$150 in the first year, \$100 in each subsequent year.

-Cost of settlement is \$200.

Compute the gross annual premium.

4-It is estimated that the following expenses will be incurred on a 17- payment, whole life insurance policy of \$250,000 issued to a person aged 70.

-Commission: 40% of the first year gross premium, 20% of the second year gross premium, 15% of the third through the ninth year gross premium, 10% of all premiums collected thereafter.

- Premium tax 6% of each gross premium.

-Administrative expenses: \$150 in the first year, \$100 in each subsequent year.

-Cost of settlement is \$200.

Compute the gross annual premium.

Commutation Table

Age x	D_x	N_x	M_x	Age x	D_x	N_x	M_x
60	10713.4	127571.8	5219.880	80	1799.3	10077.0	1365.349
61	10087.2	116858.4	5054.995	81	1551.6	8277.8	1195.177
62	9483.5	106771.2	4885.654	82	1325.2	6726.1	1035.581
63	8900.9	97287.8	4711.486	83	1119.5	5400.9	886.898
64	8338.2	88386.9	4532.086	84	933.9	4281.4	749.501
65	7794.5	80048.6	4347.424	85	768.3	3347.6	624.164
66	7269.2	72254.1	4157.795	86	622.8	2579.2	511.715
67	6762.5	64984.9	3964.075	87	497.0	1956.5	412.732
68	6274.3	58222.5	3767.067	88	390.2	1459.5	327.343
69	5804.8	51948.2	3567.796	89	301.2	1069.3	255.180
70	5353.9	46143.4	3366.870	90	228.5	768.1	195.431
71	4920.9	40789.5	3164.448	91	170.2	539.6	146.944
72	4505.1	35868.6	2960.529	92	124.3	369.4	108.354
73	4105.7	31363.5	2755.092	93	88.8	245.1	78.214
74	3722.0	27257.8	2548.263	94	61.8	156.3	55.102
75	3354.5	23535.7	2341.021	95	41.7	94.5	37.598
76	3004.0	20181.2	2134.983	96	26.7	52.8	24.443
77	2671.9	17177.2	1932.218	97	15.7	26.1	14.610
78	2359.6	14505.3	1735.021	98	7.8	10.4	7.382
79	2068.6	12145.6	1545.574	99	2.6	2.6	2.451