Question #246
Answer: E

Let G denote the gross premium
EPV (expected present value) of benefits

$$= (0.1)(3000)v + (0.9)(0.2)(2000)v^2 + (0.9)(0.8)1000v^2$$

$$= \frac{300}{1.04} + \frac{360}{1.04^2} + \frac{720}{1.04^2} = 1286.98$$

EPV of premium = G
EPV of expenses $= 0.02G + 0.03G + 15 + (0.9)(2)v$

$$= 0.05G + \frac{16.8}{1.04}$$
$$= 0.05G + 16.15$$

Equivalence principle: $G = 1286.98 + 0.05G + 16.15$

$$G = \frac{1303.13}{1 - 0.05} = 1371.72$$