Given: Sample = 937 men who died in 1999
Let A = event that a dead is due to a heart disease
B = event that the dead had at least one parent who suffered from heart disease
B^c = event that neither of the dead’s parents suffered from heart disease

Given: \#(A) = 210
\#(B) = 312
\#(A \cap B) = 102

\[ P(A) = \frac{\#(A)}{\text{Total } \# \text{ in the sample}} = \frac{210}{937} \]
\[ P(B) = \frac{\#(B)}{\text{Total } \# \text{ in the sample}} = \frac{312}{937} \]
\[ P(\overline{A \cap B}) = \frac{\#(A \cap B^c)}{\text{Total } \# \text{ in the sample}} = \frac{102}{937} \]

Want: The probability that a man randomly selected from the group died of heart disease (A) given that neither of his parents suffered from heart disease (B complement)

\[ P(A | B^c) = \frac{P(A \cap B^c)}{P(B^c)} \]

\[ P(B^c) = 1 - P(B) = 1 - \frac{312}{937} \]

\[ P(A | B^c) = P(A) - P(A \cap B) = \frac{210}{937} - \frac{102}{937} = \frac{108}{937} \]

\[ P(A | B^c) = \frac{108}{937} = \frac{108}{625} = 0.173 \]

ANS: B