

**Question #192****Answer: B**

The conditional expected value of the annuity, given  $\mu$ , is  $\frac{1}{0.01 + \mu}$ .

The unconditional expected value is

$$\bar{a}_x = 100 \int_{0.01}^{0.02} \frac{1}{0.01 + \mu} d\mu = 100 \ln \left( \frac{0.01 + 0.02}{0.01 + 0.01} \right) = 40.5$$

100 is the constant density of  $\mu$  on the interval  $[0.01, 0.02]$ . If the density were not constant, it would have to go inside the integral.