86. Aggregate losses for a portfolio of policies are modeled as follows:

(i) The number of losses before any coverage modifications follows a Poisson distribution with mean λ.

(ii) The severity of each loss before any coverage modifications is uniformly distributed between 0 and b.

The insurer would like to model the impact of imposing an ordinary deductible, $d\left(0 < d < b\right)$, on each loss and reimbursing only a percentage, $c\ \left(0 < c \le 1\right)$, of each loss in excess of the deductible.

It is assumed that the coverage modifications will not affect the loss distribution. The insurer models its claims with modified frequency and severity distributions. The modified claim amount is uniformly distributed on the interval $\left[0, c\left(b-d\right)\right]$.

Determine the mean of the modified frequency distribution.

(A) λ

(B) λc

(C) $\lambda \dfrac{d}{b}$

(D) $\lambda \dfrac{b-d}{b}$

(E) $\lambda c \dfrac{b-d}{b}$