6. You are given:

Claim Size (X)	Number of Claims
(0, 25]	25
(25, 50]	28
(50, 100]	15
(100, 200]	6

Assume a uniform distribution of claim sizes within each interval.

Calculate $E(X^2) - E[(X \wedge 150)^2]$.

(A) Less than 200

(B) At least 200, but less than 300

(C) At least 300, but less than 400

(D) At least 400, but less than 500

(E) At least 500

7. The number of claims follows a negative binomial distribution with parameters β and r, where β is unknown and r is known. You wish to estimate β based on n observations, where $\bar{x}$ is the mean of these observations.

Determine the maximum likelihood estimate of β.

(A) $\bar{x} / r^2$

(B) $\bar{x} / r$

(C) $\bar{x}$

(D) $r\bar{x}$

(E) $r^2\bar{x}$