**175.** Three observed values of the random variable $X$ are:

$$1 \quad 1 \quad 4$$

You estimate the third central moment of $X$ using the estimator:

$$g(X_1, X_2, X_3) = \frac{1}{3}\sum\left(X_i - \bar{X}\right)^3$$

Determine the bootstrap estimate of the mean-squared error of $g$.

(A) Less than 3.0

(B) At least 3.0, but less than 3.5

(C) At least 3.5, but less than 4.0

(D) At least 4.0, but less than 4.5

(E) At least 4.5