Question #57
Answer is E

For an interval running from *c* to *d*, the uniform density function is $f(x) = g/[n(d-c)]$ where *g* is the number of observations in the interval and *n* is the sample size. The contribution to the second raw moment for this interval is:

$$\int_c^d x^2 \frac{g}{n(d-c)}dx = \left.\frac{gx^3}{3n(d-c)}\right|_c^d = \frac{g(d^3-c^3)}{3n(d-c)}.$$

For this problem, the second raw moment is:

$$\frac{1}{90}\left[\frac{30(25^3-0^3)}{3(25-0)}+\frac{32(50^3-25^3)}{3(50-25)}+\frac{20(100^3-50^3)}{3(100-50)}+\frac{8(200^3-100^3)}{3(200-100)}\right]=3958.33.$$