**ChE 320\_Spr\_17\_HW 4 Grading Rubric**

**Total: 100 pts.** (Please do not cut point more than once for the same mistake, e.g. If there are 3 parts in a question, answer was calculated wrong in the 1st part. But the method was correct for the 2nd and 3rd part; give student the points of 2nd and 3rd part*. If applicable, credits for the answers are also given for using correct units*)

**3-182 (20 pts)**

a) V(Y) = 9V(X1) + 25V(X2) + 2(3\*5)Cov(X1, X2) = 18 + 250 + 30(3) = 358 *+7 for correct method, +3 for answer*

b) 

*+7 for correct method, +3 for answer*

**3-196 (20 pts)**

a) Mean: 50, Variance: 16/25 = 0.64 *+3 for correct method, +2 for answer*

b) P(≤ 49) = 0.10565 *+3 for correct method, +2 for answer*

c) P(> 52) = 0.00621 *+3 for correct method, +2 for answer*

d) P(49 P(96 ≤≤ 51.5) = 0.969604 – 0.10565 = 0.863954 (approximately) *+3 for correct method, +2 for answer*

**3-198 (20 pts)**

a) (approximately) *+4 for correct method, +2 for answer*

b)  (approximately) *+4 for correct method, +2 for answer*

c) 

P(Z < z0) = 0.001, From the standard normal table, z0 = -3.09

(approximately) *+6 for correct method, +2 for answer*

**3-222 (30 pts)**

a)

 *+6 for correct method, +2 for answer*

b)

 *+6 for correct method, +2 for answer*

c)

 *+6 for correct method, +2 for answer*

d) The values for the Poisson, Exponential and Normal differ from each other because the variances are different.

*+6 for reasonable answers*

**3-234 (10 pts)**

n = (0.03/0.005)^2 = 36 *+6 for correct method, +4 for answer*