MA 381 HW 16

#1 (#2, pg. 424) [4 pts.]

$$Cov(X,Y) = E[XY] - E[X]E[Y]$$

$$E[X] = \sum_{y=3,4}\sum_{x=1,2,3} x \frac{1}{70} x(x+y) = \frac{17}{7} \quad \Big\} \ 1$$

$$E[Y] = \sum_{y=3,4}\sum_{x=1,2,3} y \frac{1}{70} x(x+y) = \frac{124}{35} \quad \Big\} \ 1$$

$$E[XY] = \sum_{y=3,4}\sum_{x=1,2,3} xy \frac{1}{70} x(x+y) = \frac{43}{5} \quad \Big\} \ 1$$

$$\therefore Cov(X,Y) = \frac{43}{5} - \frac{17}{7}\left(\frac{124}{35}\right) = -\frac{1}{245} \doteq .00408$$

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