QUESTION 3 20 minutes 15 points

10150261	B	40180031	B	40180229	B	40190017	B	40190219	E
10150281	A	40180038	A	40180235	A	40190018	D	40190230	B
10160263	C	40180039	C	40180240	C	40190020	E	40190232	A
40090444	D	40180040	D	40180244	D	40190036	C	40190238	C
40150420	E	40180044	E	40180254	E	40190077	E	40190242	D
40160749	B	40180056	B	40180255	B	40190085	B	40190251	E
40170218	A	40180063	A	40180260	A	40190098	A	40190254	B
40170411	C	40180065	C	40180527	C	40190100	C	40190431	A
40170812	D	40180098	D	40180619	D	40190208	D	40190517	C
40180003	E	40180117	E	40180752	E	40190209	E	40190617	D
40180009	B	40180205	A	40180804	B	40190212	B	40190736	E
40180010	A	40180206	B	40180806	A	40190213	A	40190737	B
40180015	C	40180217	C	40180808	C	40190216	C	40190746	A
40180020	D	40180225	D	40180925	D	40190217	D	40190748	C
40190754	E	40190791	E	40190912	A				

GROUP: A GROUP: B GROUP: C GROUP: D GROUP: E

GROUP: A

3) X and Y are independent, identically distributed random variables with mean μ and variance σ^2. Find the following quantities in terms of μ and σ^2.

a) $E[2X+3Y]$
b) $E[6XY]$
c) $Var[2X+3Y+6]$
d) $Var[4XY]$

GROUP: B

3) X and Y are independent, identically distributed random variables with mean μ and variance σ^2. Find the following quantities in terms of μ and σ^2.

a) $E[3X+2Y]$
b) $E[3XY]$
c) $Var[3X+2Y+4]$
d) $Var[3XY]$

GROUP: C

3) X and Y are independent, identically distributed random variables with mean μ and variance σ^2. Find the following quantities in terms of μ and σ^2.

a) $E[4X+3Y]$
b) $E[2XY]$
c) $Var[4X+3Y+3]$
d) $Var[5XY]$

GROUP: D

3) X and Y are independent, identically distributed random variables with mean μ and variance σ^2. Find the following quantities in terms of μ and σ^2.

a) $E[4X+5Y]$
b) $E[7XY]$
c) $Var[5X+4Y+3]$
d) $Var[2XY]$

GROUP: E

3) X and Y are independent, identically distributed random variables with mean μ and variance σ^2. Find the following quantities in terms of μ and σ^2.

a) $E[4X+2Y]$
b) $E[5XY]$
c) $Var[5X+2Y+4]$
d) $Var[6XY]$