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CEE 110 HW 3	
1. At Most 3 computers at a time	THEFT
P(2) = P(1) $P(0) = P(3)$	) }
$P(2) \text{ or } P(1) = \frac{1}{2} [P(0) \text{ or } P(3)]$	1/25
a) S = \( \) 0, 1, 2, 3\( \) computers	
b) $X$ 0 1 2 3 $P(x) = pmf \frac{1}{3} \frac{1}{6} \frac{1}{6} \frac{1}{3}$	
113 1/6	
$P(x) = \frac{1}{16} = $	
0 1 2 3 X	
about to endowing the transfer and to decreat horizon as	
c) x 0 1 2 3	
$F(x) = cdf \left( \frac{1}{3} \right) \left( \frac{1}{2} \right) \left( \frac{2}{3} \right) \left( \frac{3}{3} \right) = 1$	
2 2/3	
F(x) 3 1/3 1/13	
3 14010140140	3
0 1 2 3	
d) $E(x) = (0 \times \frac{1}{3}) + (1 \times \frac{1}{6}) + (2 \times \frac{1}{6}) + (3 \times \frac{1}{8})$	
$E(x) = 0 + \frac{1}{6} + \frac{1}{3} + 1$	
E(x) = 1.5	
The expected number of computers being repaired is 1.5	
N N N N N N N N N N N N N N N N N N N	

Property of								
2.	X	0	1	2	3	4 4 6 1		
	P(X)	0.6561	0.2916	0.0486	0.0036	0.0001		
a)	E= 0.4	1		5) + (2 × 0.1		3×0.0036) -1 (4 × 0.0001)		
b)	X 2	0		de de	- A	K 1 199 (199)		
D)		0	0.2011		10			
	F= (1	7 - 0 (5(1)	0.2916   0.1	0.00	36   0.0	0001		
	E = 0.	57	4(1x0,29	16)+(9×0	.0486) +	(9 × 0.0036) * (16 × 0.0001)		
	-	ALCOHOL STATE OF THE STATE OF T	ve af the	CAVAGO AF	the and	ber of bits ]		
	3 M	error 15	0.52	square or	The num	per of bits		
c)	V(x) =	E(x2)	$-\left(E[x]\right)^2$					
	A STATE OF THE PARTY OF THE PAR	] -> from		37.1	2 2 19			
	ELxz	E[x2] -> from part b						
	V(x)=	V(x) = 0,52 - (0.4)2						
· · · · · · · · · · · · · · · · · · ·	Barrier Control	V(x) = 0.36						
	The variance of the number of bits merror is 0.36							
44		11.5				1 = 0 > - (2)   (3)		
			*		B B			
	1.6							
					148 35 118	Angenes and		
			100					
		1.38						
			AS IN					
		ANTICAL TOTAL				_		

7	0 - 1				T	1	1 40 1	
3.	Passengers / Car	3 1 23	2	3			6	
	Cars	35	18	12	21	4	1 10 1	100
					1	4 1	x 3 6 1	
a)	E(x)= (1×0.35)+(2×0.18)+(3×0.12)+(4×0.21)+(5×0.04)+(6×0.10)							0.10)
	EW= 2.71						<u> </u>	
	The expected	value o	if their	sales	78 2.71			
	the same because and a section of the contract of the same and							
b)	$E(x^2) = (1 \times 0.35) + (4 \times 0.18) + (9 \times 0.12) + (16 \times 0.21) + (25 \times 0.04) + (36 \times 0.10)$							
	E(x)2= 10.11	E.	E(x)] <sup>2</sup>	= 7.3	441	A. Item	Few	( a
	V(x) = E(x)	2 - [E	(x)] <sup>2</sup>	= 10.1	11-7.340	11 = 2	.7659	
	The variance	of their	sales	is 2,	7659			
				Control of the Control	× 1			
c)	E(ax+b):	e on Elk!	1+6	11.0	, 54 -47 m	of road.	ely v	national and a supplied on the
	a=5 b	= 50	100	1) = 1	,0 = ( , )		-	
	Because the	cost of	the dr	ever is	included i	within	the	
	\$50 fee, I	am as	sunny	the \$5	fee is a	nly for	John y Sil	
	passengers	m the	car o	THERT	HAN the	driver		
	E(5x + 50)				10 m 12 d 3 m			
								de la maria de la composición dela composición de la composición de la composición dela composición dela composición dela composición dela composición de la composición de la composición dela composición
	The second secon	= 58.50				7545B		
	The expecteo	l revenu	e is g	58.55	Trackly 1			
	Property of	49	0.				3.60 F 2	B 1970 Charles of the Control of the
				1	1			rec
	If the drive	er naust	pay \$5	on t	op of the	\$50 1	ee:	10
	E(5x 150)	€ 5 × E1	(x) 150	/				
		= [5 x 2		0				
	( / /	= 63.5			19 1	1 7080	- P	
	The expected	vevenu	exs \$6	3.55/	har har	)	24.5	
	1			p				
	The worder	of is or	bit con	Justing	SO IN	rate o	ivt	
	both	possibili	ties			16 A 17 A		
	and the second s			THE PARTY OF THE P	The state of the s			

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4. 10% of vehicles violate 12 vehicles selected at random
a) p = 0.1 \quad x = 3 \quad n = 12
     b(x)n,p) \rightarrow b(3;12,0.1)
\binom{12}{3} \times 0.1^3 \times (1-0.1)^{12-3}
      \binom{12}{3} \times 0.1^3 \times (0.9)^9
      220 × 0.061 × 0.38742 = 0.0852
     The probability that exactly 3 violate the standard is 0.0852
     Fewer than 3: O violations, I violation, 2 violations
 b)
      0 violations: b(0;12,0.1)

\binom{12}{0} \times 0.1^{0} \times (0.9)^{12}
                         x | x 0.2824 = 0.2824
       | violation: 6(1; 12, 0.1)
                  \binom{12}{1} \times 0.1 \times (0.9)^{11}
             12 * 0.1 * 0.3138 = 0.3766
     2 violations: b(2;12,0.1)
\binom{12}{2} \times 0.1^2 \times (0.9)^{10}
                  66 × 0.01 × 0.3487 = 0.2301
      P(Ovidations) + P(Ividation) + P(Zviolations)
            0.2824 + 0.3766 + 0.2301 = 0.8891
     The probability that fewer than three cars violate the
       standard is 0.8891
      O violations: b(0;12,0.1) + 10 + 10 + 10 + 11
 c)
                  (12) x 0,10 x (0,9) 12
                       x 1 x 0.2824 = 0.2824
     The probability that none of the cars violate
      the standard is 0.2824
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	0.764	
5.	max contaminant: 10mg/L 10 days of monitoring - P(Max) = 0.1	-
(1)	P(at most 8 no violations) = 1 - P(Oviolations) + P(1 violations)	
	1 valations -> 6(0:10 0.1)	-
	$\binom{10}{0} 0.10 (1-0.1)^{10-0} = 0.348$	-
	1 watations -> b(1:10 01)	
	(10) 0.1 (1-0.1) = 0.387	-
	Plat most 8 no violations) = 1-0.348-0.387	-
	The probability that at most 8 days of monitoring	-
	will comply is 0.265	-
		1
b)	P(at least 8 no violations) = P(8 no violations) + P(9 no violations) + P(10 no violations)	-
	8 Valations > h(8:10 1.9)	-
	$\binom{10}{8} 0.9^8 (1-0.9)^{10-8} = 0.194$	_
	9 no violations -> b (9:10, 0.9)	-
	$\binom{10}{9}0.9^9(1-0.9)^{10-9}=0.387$	-
	10 no violations -> b(10;10,0.9)	-
	$\binom{10}{10}$ $0.9^{10}$ $(1-0.9)^{10-10} = 0.349$	_
	0.194 + 0.387 + 0.349 = 0.93	-
	The probability that at least 8 days of monitoring will	+
	comply 15 0.93	-
	The state of the s	-
c)	$P(2 \text{ violations}) \rightarrow b(2;10,0.1)$	_
	$\binom{10}{2} \cdot 0.1^2 \cdot (1-0.1)^{10-2} = 0.1937$	-
	The probability that exactly 2 days will violate is 0.1937	_
	3526.7 2 20 3.6 × 20 3.6 × 20 3.6 × (30 × ) 7 × ( 2 × 37 ) (4	_
d)	P(no violation) = 1-0.1 = 0.9	_
	E(x) = NP = 10 x 0,9 = 9	-
	V(x) = np(1-p) 1	_
	= 9/1 - 0.9 = 0.9	
	$\sigma = \sqrt{v(a)} = \sqrt{0.9}$	_
9.88	The expected value is 9. The standard deviation is - 0.9 = 0.949	_
	3 House In the more than the same of the device of the Comment of	
	where the same of the street was the same to be a second of the same of the sa	1000
		1000

6.	10 basaltic 10 granite randomly select 15
a)	Sample space: 25, 6, 7, 8, 9, 103
	Hypergeometric distribution
	5 granite: P(5) = h(5; 15, 10, 20)
	$Q(5) = {\binom{10}{5}} {\binom{20-10}{15-5}} = 0.0117$
	$P(5) = \frac{h(5, 15, 10, 20)}{\binom{10}{15} \binom{20-10}{15}} = 0.0163$
	6 granite: P(6) = N(6:15 10 20)
	$P(6) = \frac{\binom{10}{6}\binom{20-10}{15-6}}{\binom{20}{15}} = 0.1354$
	7 granite: P(7) = h(7;15,10,20)
e south a second	
	$P(7) = \frac{\binom{10}{7}\binom{20-10}{15-7}}{\binom{20}{15}} = 0.3483$
	8 gianite: P(8) = h(8; 15, 10, 20)
	$P(8) = \frac{\binom{10}{8}\binom{20-10}{15-8}}{\binom{20}{15}} = 0.3483$
	0 - 1 P(0) - 1/0 15 11 - 1
	9 granste: P(9) = h(9), 15, 10, 20)
	$P(9) = \frac{\binom{10}{15}, 10, 20}{\binom{20}{15}} = 0.1354$
	10 granite: $P(10) = h(10; 15, 10, 26)$ $P(10) = \frac{\binom{10}{10}\binom{20-10}{15-10}}{\binom{20}{15}} = 0,0163$
/	P(10) = (13-10) = 0,0163
X	
P(x) = pmf	
	10,010
h)	P(X=5) + P(X=10) = 0.0163 + 0.0163 = 0.0326
	There is a 0.0326 probability that this will happen,
	the section of the se
c)	$Mean = expected value   E(x) = n \times \frac{M}{N}   E(x) = 15 \times \frac{10}{20} = 7.5$
	$V(x) = \left(\frac{20 - 15}{20 - 1}\right) \times 15 \times \frac{10}{20} \times \left(1 - \frac{10}{20}\right) = 0.9869$
	$\sigma = \sqrt{v(x)} = \sqrt{0.9869} = 0.9934$
1121 1 10	$P(6.5066 \le x \le 8.4934) \rightarrow P(7) + P(8) = 0.3483 + 0.3483 = 0.6966$
	There is a 0.6966 probability that the number of granite
4	specimens selected is within 1 std. deviation of its mean value
	1 Man 113 Miles All All All All All All All All All Al