	Probability Problems	
		and a stage of publication representation and
1)	# of ways to aste 8 guestions for 15 students: 158	
	# of ways by to select 8 students from 15 :n order: 15! = 259459200	
	# of ways to aste 8 questions for 15 students: 15^8 : # of ways to to select 8 students from 15 in order: $\frac{15!}{259459200} = 259459200$ P(no student answers more than one question) = $\frac{259459200}{15^8} = 0.101237$	
25	0-100: no even numbers where first two digite are odd.	
	100-1000: first digit ~ (1,3,5,7,9) second digit ~ (1,3,5,7,9) third digit ~ (0,	2,4,68)
	# of even numbers with 2 odd digits first = 6. (5-1). 5 = 100	
	1000-10000: First and second digit ~ (1,3,5,7,9) third digit ~ (0-9) fauth ~ (0,2,4,	6,8)
	# of even numbers with 2012 digits first = 5.(6-1).(9-2).(5) = 700	· · · · · · · · · · · · · · · · · · ·
	10000 - 99999: First and second ~ (1,3,5,7,9) ahad and furth ~ (0-9) AAL ~ (0,2,4,6,8)	
	# of even numbers with Dood digits first = 6.(5-1).(9-2).(9-3).(5)=1	-1200
	Total # of even numbers with 2 odd drys First = 100+900 + 4200 = 5000 Total #'s between 0-99999 = 103	7
	Total #'s between 0-9019199 = 105	
	P(registed #) = 5000 = 0.05 - Let n=8 p=0.05	
- 2	Let X = \$ of into that meet crist. and of 8.	
12	0111 6 - 00 1006 11 5 6 3	
12	P(X=5) = 8Cs (0.05) (1-0.05) = [1.5004 × 105]	
2	$\frac{3}{1}$ $\frac{9}{1}$ $\frac{9}{1}$ $\frac{9}{1}$ $\frac{9}{1}$ $\frac{9}{1}$ $\frac{9}{1}$ $\frac{9}{1}$	
_2"	4 or above: 3 A~ P(2 or more show 4 or more) = P(x=2). P(x=3) = 1 B~ P(all three show same) = 63 = 36	
1	P(ANB) = P(all cre 4) + P(all cre 5) + P(all cre 6) = 72	
1	(A10) = 1(all de 1) + f(all et 5) + f(all et 6) = 72	
5	Since PLATIPUS) = à 36 = 72 = PLAMB) A and B ored indepen	delt
D		
40	P(flush) = BCs = 0.001980792 X = H of hands until	
	, one flush	
	$P(flush) = \frac{4(3C_5)}{82C_5} = 0.001980792$ $X = H cf hands until (3C_5)$ $X \sim Geometric(0.001980792) - E[X] = \frac{1}{p} = \frac{1}{0.001980792} = [504.8484]$	-

5) P(win | super) = 0.7 Plwin I mosuper) = 0.5 Plouper) = 0.75 for new 4 5 games P(win \(\frac{1}{5} \) super) = 5C4 (0.7) (0.3) = 0.36015 P(win \(\frac{1}{5} \) no super) = 5(4 (0.5) = 0.15625 P(win = 0.16625) 0.25 + (0.36015) 0.75 = 0.309175 P(super1 uln = (0.36015) 0.75 = (0.8737