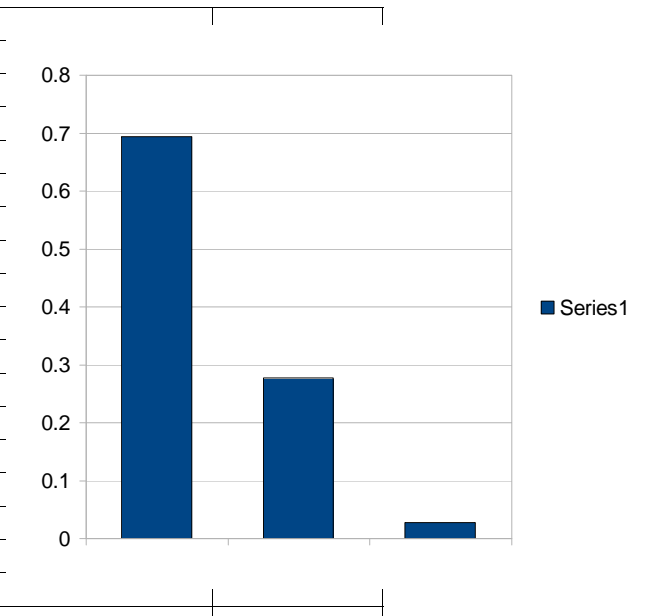


2DL HW 6

Taylor 10.2			
Throwing nu aces in two throws			
Number aces	Prob.		
0	$(5/6)*(5/6)$	=	0.6944444444
1	$2*(5/6)*(1/6)$	=	0.2777777778
2	$(1/6)*(1/6)$	=	0.0277777778
			1



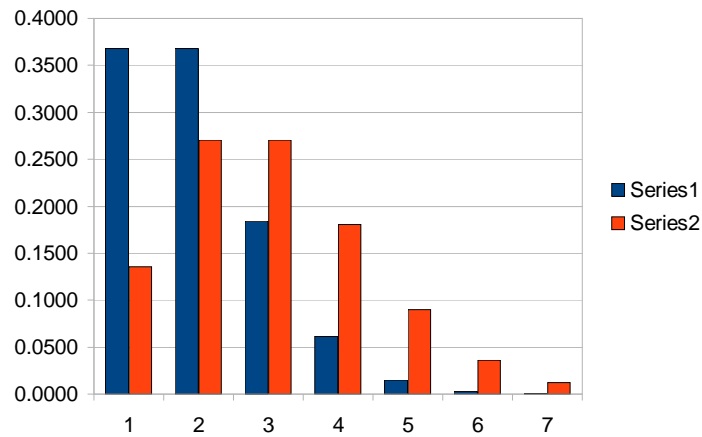
Taylor 10.6			
nu	Binomial Coefficient (n=4)		
0	$4!/(0!*4!)$		1
1	$4!/(1!*3!)$		4
2	$4!/(2!*2!)$		6
3	$4!/(3!*1!)$		4
4	$4!/(4!*0!)$		1

$$p^4+4p^3q+6p^2q^2+4pq^3+q^4$$

Taylor 10.10					
Survivors	Probability			Probability	Survivors
0	$.8^4$	$*1=$	0.4096	0.4096	0
1	$.8^3*.2$	$*4=$	0.4096	0.4096	1
2	$.8^2*.2^2$	$*6=$	0.1536	0.1808	2 or more
3	$.8*.2^3$	$*4=$	0.0256		
4	$.2^4$	$*1=$	0.0016		
			1.0000	1.0000	

2DL HW 6

Taylor 10.16					
		Binomial (n=4)		Gauss (X=2, sigma=1)	
	nu	Prob.		Prob. (Taylor 5.25)	
	0	$1 \cdot 0.5^4 =$	0.0625	0.053990989	
	1	$4 \cdot 0.5 \cdot 0.5^3 =$	0.25	0.241970827	
	2	$6 \cdot 0.5^2 \cdot 0.5^2 =$	0.375	0.398942449	
	3	$4 \cdot 0.5 \cdot 0.5^3 =$	0.25	0.241970827	
	4	$1 \cdot 0.5^4 =$	0.0625	0.053990989	
			1	0.990866081	
Taylor 11.2					
		Poisson Distribution (mu=1)		Poisson Distribution (mu=2)	
	nu				
	0	0.3679		0.1353	
	1	0.3679		0.2707	
	2	0.1839		0.2707	
	3	0.0613		0.1804	
	4	0.0153		0.0902	
	5	0.0031		0.0361	
	6	0.0005		0.0120	



Col C: mu=1
Col C: mu=2

2DL HW 6

Taylor 11.4						
	nu		Prob 2 or less			
	0	0.0821	0.54			
	1	0.2052				
	2	0.2565				
		0.2138				
		0.1336				
		0.0668				
		0.0278				
		0.0099				
		0.995753305				
	Prob 0=	0.0821	Days w/0 eggs=	2.2988	2	
	Prob 2 or less=	0.54	Days w/2 or less eggs=	15.12	15	
	Prob 3 or more=	0.46	Days w/3 or more eggs=	12.88	13	
Taylor 11.20						
	Particles	Time (min)	Particles per min	Uncertainty	Particles per hour	Uncertainty
Rock	225	10	22.5	4.74341649	1350	36.74234614
Background	90	6	15.0	3.872983346	900	30
	Rock activity=1350-900=450					
	Rock activity uncertainty=SQRT(36.74^2+30^2)=			47.4341649		
	Rock acitivity=450±50 particles per minute					
	Experiment shows that rock is radioactive within uncertainty.					