

#3)

B	B	B
R		
B	B	R
R	B	B
B	B	B

 $\rightarrow$ Pick 3 randomly w/o replacement
 $\rightarrow P(B \frac{1}{3} R \frac{1}{3} R) = \frac{9}{13} \cdot \frac{4}{12} \cdot \frac{3}{11} = \frac{9}{143}$

#4)

x	$P(x)$	$x P(x)$	$x^2 P(x)$
0	.304	0	0
1	.439	.439	.439
2	.213	.426	.852
3	.041	.123	.369
4	.003	.012	.048
	1.000	1.000	1.708

a) $P(2) = .213$

b) $\mu = \sum x P(x)$
 $= 1.000$

c) $\sigma = \sqrt{\sum x^2 P(x) - \mu^2}$
 $= \sqrt{1.708 - 1^2}$
 $= \sqrt{0.708} = 0.841$

d) $\text{Var}(x) = \sigma^2 = 0.708$

#5) Binomial Experiment

$n = 12$ trials, $S = \text{reader}$, $p = P(S) = 0.78$

a) $x = 7$

$P(x) = n C_x p^x q^{n-x}$

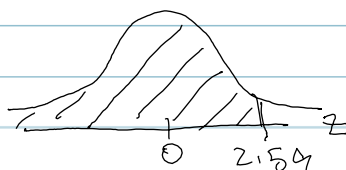
$P(7) = 12 C_7 (0.78^7) (0.22^{12-7})$
 $= 792 (0.78^7) (0.22^5)$
 $= 0.0717$

b) $\mu = np = 12 (.78) = 9.36$

$\sigma = \sqrt{npq} = \sqrt{12 (.78) (.22)} = 1.43$

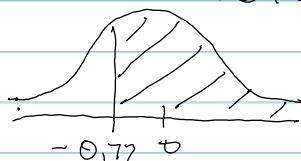
#6) Normal Distribution $\rightarrow$ Table A1

a) $P(Z < 2.59)$
 $= .9952$



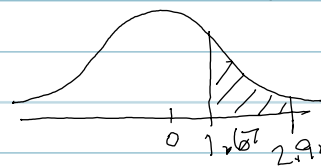
z	$\rightarrow .09$
$\downarrow$	$\downarrow$
2.5	$\rightarrow .9952$

b) $P(Z > -0.72)$
 $= 1 - .2358$
 $= .7642$



z	$\rightarrow .02$
$\downarrow$	$\downarrow$
-0.7	$\rightarrow .2358$

c) $P(1.67 < Z < 2.94)$
 $= .9984 - .9525$
 $= .0459$



z	$\rightarrow .04$	z	$\rightarrow .07$
$\downarrow$	$\downarrow$	$\downarrow$	$\downarrow$
2.9	$\rightarrow .9984$	1.6	$\rightarrow .952$