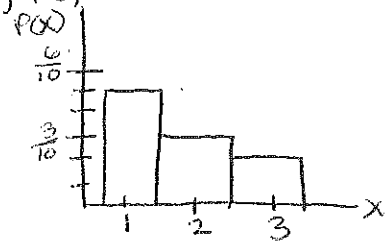
10.6 pg. 727 #23-35 odd, 43, 47

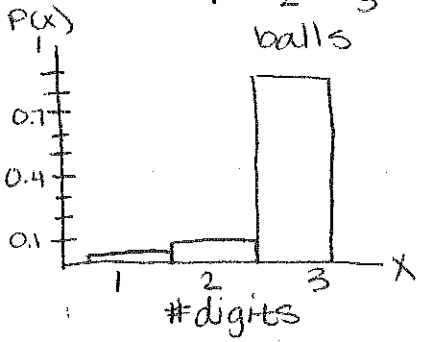
3.)

X (# on ball)	1	2	3
Outcomes	5	3	2
P(X)	$\frac{5}{10}=\frac{1}{2}$	$\frac{3}{10}$	$\frac{2}{10}=\frac{1}{5}$



5.)

X (# digits)	1	2	3
Outcomes	10	90	900
P(X)	$\frac{10}{1000}=\frac{1}{100}$	$\frac{9}{100}$	$\frac{9}{10}$



7.) 3

9.) C

11.) $P(2\text{ heads}) = {}_{20}C_2 \cdot \left(\frac{1}{2}\right)^2\left(\frac{1}{2}\right)^{18} \approx .00018$

13.) $P(6\text{ heads}) = {}_{20}C_6 \cdot \left(\frac{1}{2}\right)^6\left(\frac{1}{2}\right)^{14} \approx 0.037$

15.) $P(12\text{ heads}) = {}_{20}C_{12} \cdot \left(\frac{1}{2}\right)^{12}\left(\frac{1}{2}\right)^{8} \approx 0.120$

17.) ${}_{20}C_{18} \cdot \left(\frac{1}{2}\right)^{18}\left(\frac{1}{2}\right)^{2} \approx 0.00018$

19.) $P(2) = {}_{30}C_2 (0.25)^2 (0.75)^{28} \approx .0086$

$\frac{1}{4}$ is Right $\frac{3}{4}$ wrong

21.) $P(11) = {}_{30}C_{11} (.25)^{11} (0.75)^{19} \approx .055$

23.) $P(21) = {}_{30}C_{21} (.25)^{21} (.75)^{9} \approx .00000024$

25.) $P(30) = {}_{30}C_{30} (.25)^{30} (.75)^{0} \approx .0000000000000000000000087$

27.) The ${}_5C_3$ was left out; ${}_5C_3 \left(\frac{1}{6}\right)^3 \left(\frac{5}{6}\right)^{5-3} \approx 0.03$

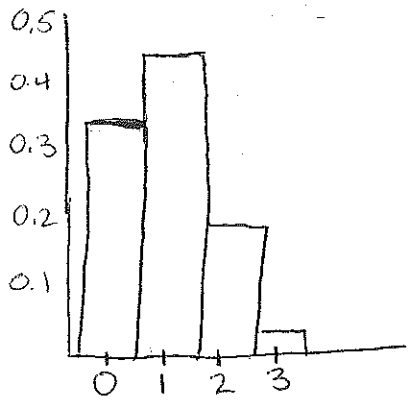
29.) $P(\geq 5) = {}_8C_5 (.6)^5 (.4)^3 + {}_8C_6 (.6)^6 (.4)^2 + {}_8C_7 (.6)^7 (.4)^1$
$+ {}_8C_8 (.6)^8 (.4)^0 = .28 + .21 + .09 + .02 \approx \boxed{0.594}$

31.) $P(\geq 10) = {}_{15}C_{10} (.75)^{10} (.25)^5 + {}_{15}C_{11} (.75)^{11} (.25)^4 + {}_{15}C_{12} (.75)^{12} (.25)^3$
$+ {}_{15}C_{13} (.75)^{13} (.25)^2 + {}_{15}C_{14} (.75)^{14} (.25)^1 + {}_{15}C_{15} (.75)^{15} (.25)^0$
≈ 0.852

$${}_nC_K\,(p)^K(q)^{n-K}$$

33)

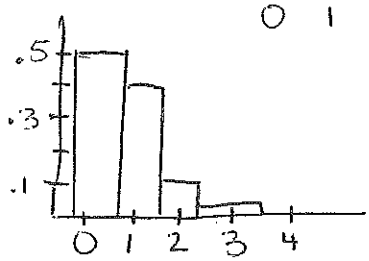
X	0	1	2	3
P(x)	.343	.441	.189	.027



Skewed; 1 success

35)

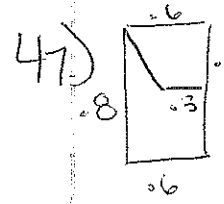
X	0	1	2	3	4
P(x)	.5	.38	.12	.01	0



Skewed; 0 success

43) $P(1\%) = {}_{25}C_1 \cdot (.01)^1 (.99)^{24} \approx .196$

47)



whole AREA $= .48\,mi^2$ CARROT AREA $= \frac{1}{2}(.9)(.3) = .135\,m^2$

p = carrot $\approx .28$ q = not carrot $= .72$

${}_7C_0(.28)^0(.72)^7, {}_7C_1(.28)^1(.72)^6, \ldots, {}_7C_7(.28)^7(.72)^0$

a & b)

X	0	1	2	3	4	5	6	7
P(x)	.1	.27	.32	.21	.08	.02	0	0

c)