5.75
pg 226

3 corp from 15
6 earned profits
9 incurred losses

$$P(\text{losses}) = \frac{9}{15} = \frac{3}{5} = .6000$$

$$P(x=2) = \frac{{}_9C_2 \cdot {}_6C_1}{{}_{15}C_3}$$

Skip pg 226 on HMWK

pg 223
5.59

sample = 10

63% shop at favorites

$P(fav) = .63$

a) 0, 1, 2, 3, 4, 5, 6, 7, 8,
9, or 10

b) $P(x = 7) = \text{binompdf}(10, .63, 7)$

$\approx {}_{10}C_7 (.63)^7 (.37)^3$ by hand

$\approx .2394$

5.61 60% no fed taxes

$n = 16$

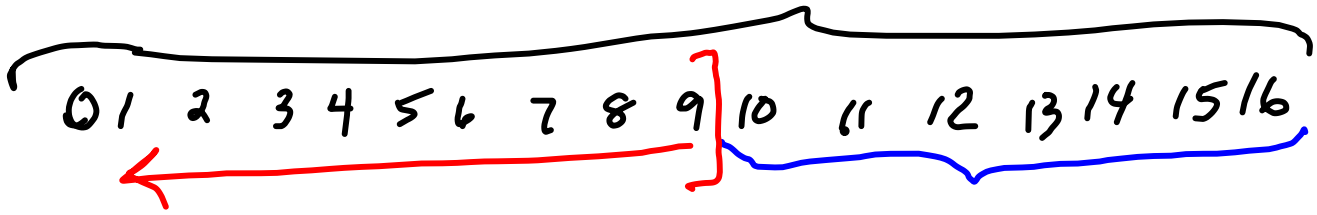
a) at most 7

$P(x \leq 7) = \text{binomcdf}(16, .6, 7)$

$\approx .1423$

b) at least 10

$P(x \geq 10) = \text{binomcdf}(16, .6, 16) - \text{binomcdf}(16, .6, 9)$ *



$\approx .5272$

OR $1 - \text{binomcdf}(16, .6, 9)$

c) 8 to 11

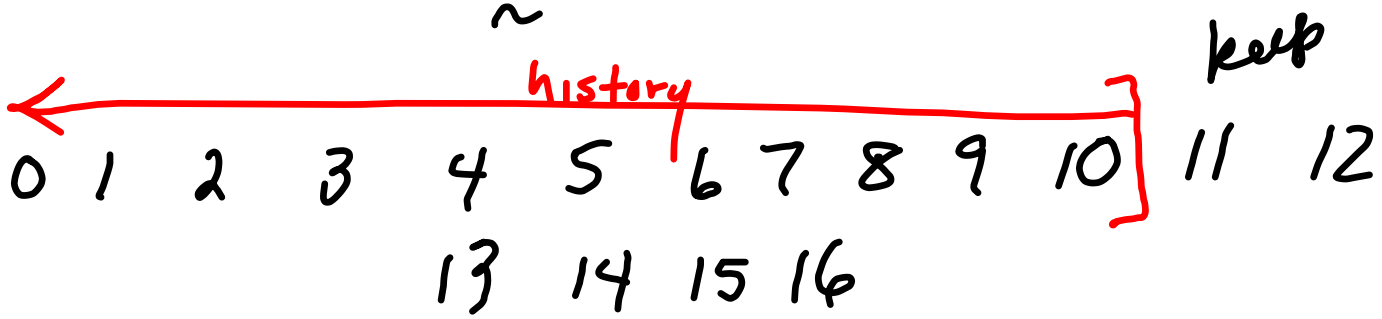
$P(8 \leq x \leq 11)$

= binomcdf(16, .6, 11) −
binomcdf(16, .6, 7)

d) more than 10 (mine)

$P(x > 10) = 1 - \text{binomcdf}(16, .6, 10)$

$\approx$



Pink #5 $20 = n$

ORDER MATTERS

$${}_{20}P_3 = \frac{20!}{17!} \qquad {}_nP_r$$

$$= 20 \cdot 19 \cdot 18$$

$$\approx 6,840$$

Pink ③ $${}_{18}C_9 = \frac{18!}{9!\,9!} = \frac{\overset{1}{\cancel{18}} \cdot 17 \cdot \overset{2}{\cancel{16}} \cdot \cancel{15} \cdot \overset{2}{\cancel{14}} \cdot 13 \cdot \overset{2}{\cancel{12}} \cdot 11 \cdot 10}{\cancel{9} \cdot \cancel{8} \cdot \cancel{7} \cdot \cancel{6} \cdot \cancel{5} \cdot \cancel{4} \cdot \cancel{3} \cdot \cancel{2} \cdot 1}$$

$$= \frac{17 \cdot 2 \cdot 2 \cdot 13 \cdot 2 \cdot 11 \cdot 10}{9}$$

$$= 48,620$$

Green $\quad {}_{20}C_9 = \dfrac{20!}{9!\,(11!)}$

$$= \frac{\cancel{20}\cdot 19\cdot \cancel{18}\cdot 17\cdot \overset{2}{\cancel{16}}\cdot \overset{5}{15}\cdot \overset{2}{\cancel{14}}\cdot 13\cdot \overset{2}{\cancel{12}}}{\cancel{9}\cdot\cancel{8}\cdot\cancel{7}\cdot\cancel{6}\cdot\cancel{5}\cdot\cancel{4}\cdot\cancel{3}\cdot\cancel{2}\cdot 1}$$

$$= 19\cdot 17\cdot 2\cdot 5\cdot 2\cdot 13\cdot 2$$

20 nCr 9 = 167,960

① $P(x \le 8) = \text{binomcdf}(16, .6, 8)$

$\approx$

Pink #4

$${}_5C_5 = 1$$

$0! = 1$

$$\frac{5!}{5!(0!)} = \frac{1}{1}$$

$$= 1$$

$${}_5C_3 = \frac{5!}{3!\,2!} = \frac{5 \cdot 4}{2 \cdot 1} = 10$$

$$\frac{n!}{x!(n-x)!}$$

Green
5

$n = 16$

3 officers

P	B	T
1	2	3
1	3	2
2	1	3
2	3	1

$${}_{16}P_3 = \frac{16!}{13!}$$

$$= \frac{n!}{(n-x)!}$$

$$= 16 \cdot 15 \cdot 14$$

$${}_nC_x = \frac{n!}{x!(n-x)!}$$