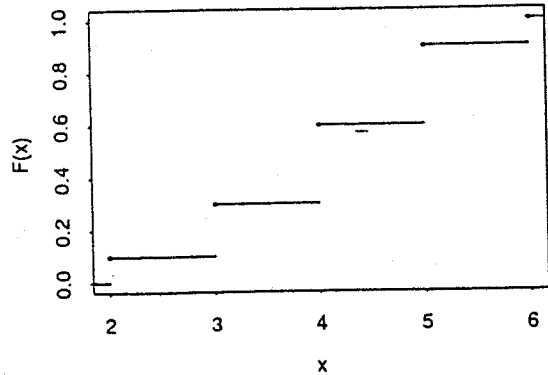
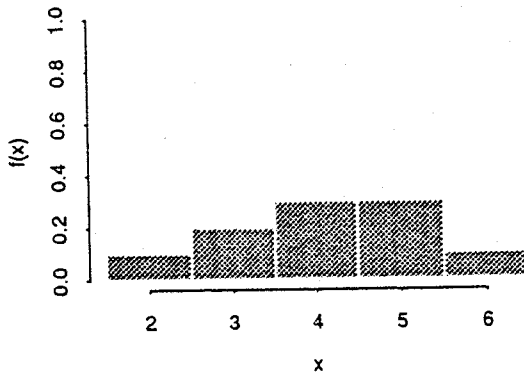


P243. 1. (a)



(b) Using equation (5-1),

$$EX = 2(.1) + 3(.2) + 4(.3) + 5(.3) + 6(.1) = 4.1.$$

Using equation (5-2),

$$\text{Var}X = 2^2(.1) + 3^2(.2) + 4^2(.3) + 5^2(.3) + 6^2(.1) - (4.1)^2 = 1.29,$$

so the standard deviation of X is $\sqrt{1.29} = 1.136$.

P322. 1.

Use equation (5-3) with $n = 6$ and $p = .9$.

(a) $P(X = 6) = .531.$

(b) $P(X \geq 4) = .984.$

(c) $P(X < 4) = 1 - P(X \geq 4) = .016.$

(d) $EX = np = 5.4.$

(e) $\text{Var}X = np(1-p) = .54$; std. dev. of $X = \sqrt{.54} = .735.$

P322. 2.

Use the binomial distribution, equation (5-3), with $n = 10$ and $p = .15$.

(a) $P(X = 2) = .276.$

(b) $P(X \geq 1) = 1 - P(X < 1) = 1 - P(X = 0) = 1 - .197 = .803.$

(c) $EX = np = 1.5.$

(d) $\text{Var}X = np(1-p) = 1.275.$

(e) $\sqrt{1.275} = 1.129.$

P244. 4

Use equation (5-3) with $n = 5$.

p	$f(0)$	$f(1)$	$f(2)$	$f(3)$	$f(4)$	$f(5)$	$EX = np$	$np(1-p)$	St. Dev.
.1	.5905	.3280	.0729	.0081	.0005	.0000	.5	.45	.6708
.3	.1681	.3601	.3087	.1323	.0283	.0024	1.5	1.05	1.0247
.5	.0312	.1562	.3125	.3125	.1562	.0312	2.5	1.25	1.1180
.7	.0024	.0284	.1323	.3087	.3601	.1681	3.5	1.05	1.0247
.9	.0000	.0004	.0081	.0729	.3280	.5905	4.5	.45	.6708

