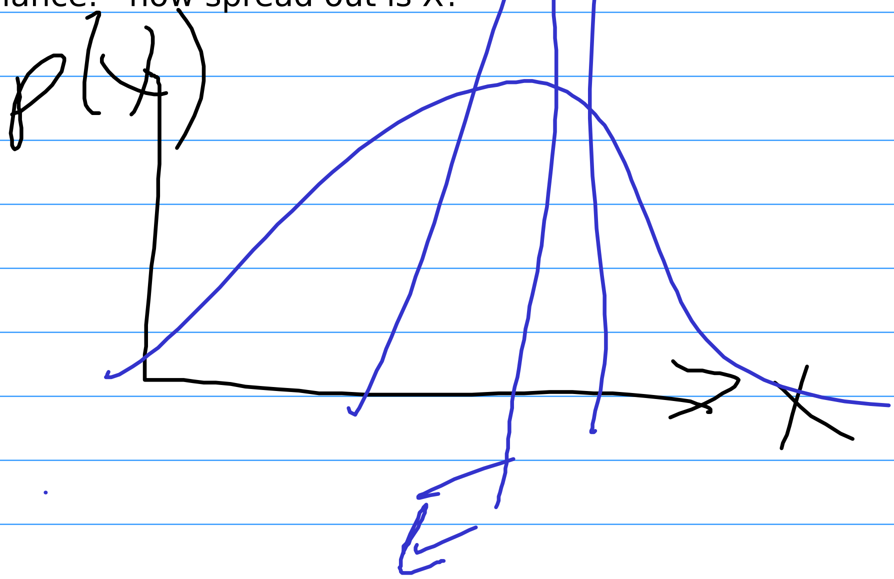
book 3.17a expected values add.

we want E[X+X^2] = E[X] + E[X^2]

regardless of whether they're correlated.

0+ 5 = 5

3.3.2 Variance: how spread out is X?



EQ 3.20 ETC.

square example S={-3, -1, 1, 3} E[X] = 0 E[X^2] = 5

VAR[X] = E[(X-m)^2] = E[X^2] = 5

STD[X] = 2.2

3.21

Suppose I shift X by 10. Y=X+10

]E[Y] = E[X] + 10 = 10

VAR[Y] = VAR[X] = 5

Suppose I scale X by 3. Z= 3X.

E[Z] = 3E[X] = 0

VAR[Z] = 9 VAR[X] = 45.

STD[Z] = 3 STD[X]

iclicker 11:   binomial n=2, k=1, p=1/4

$$\binom{2}{1}\left(\frac{1}{4}\right)^1\left(\frac{3}{4}\right)^1$$

$$= 2\,\frac{1}{4}\,\frac{3}{4} = \frac{6}{16} = \frac{3}{8}$$

iclick 12   3/4 * 1/4 = 3/16