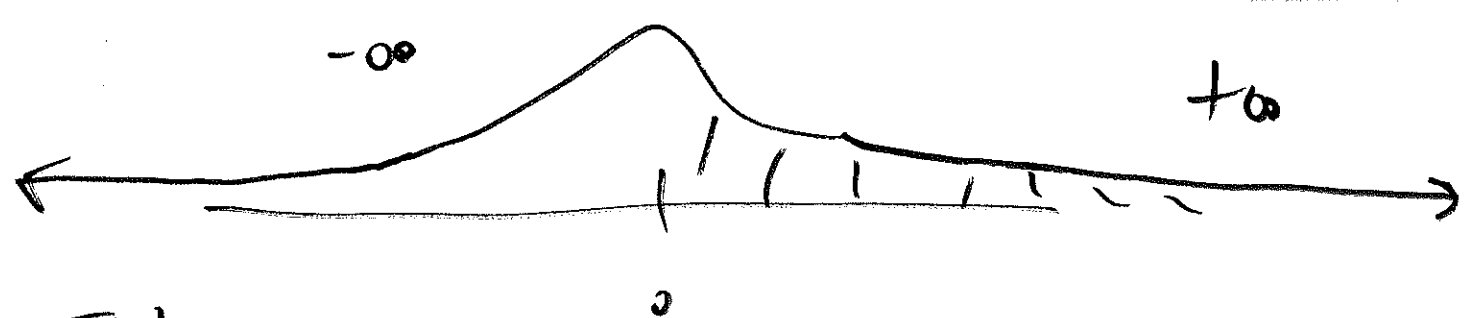
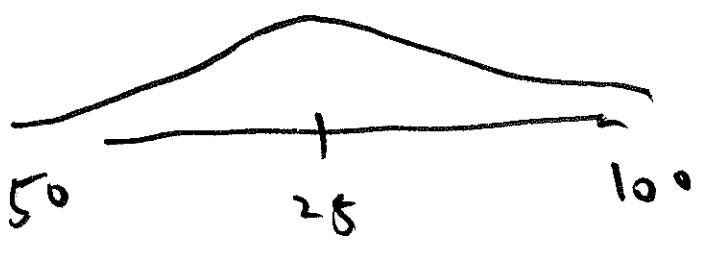
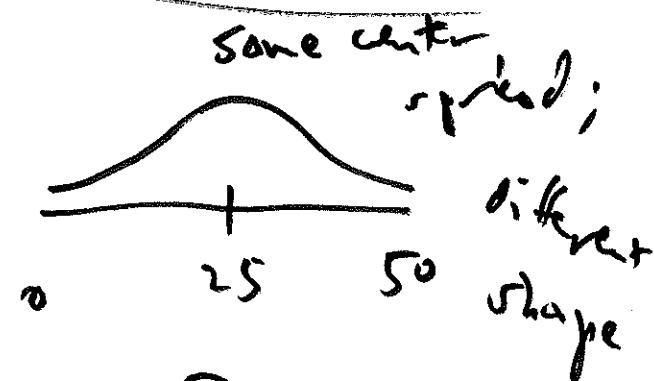
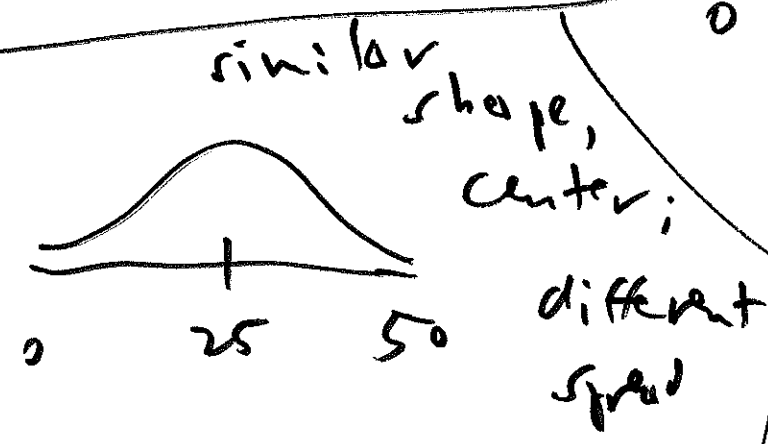
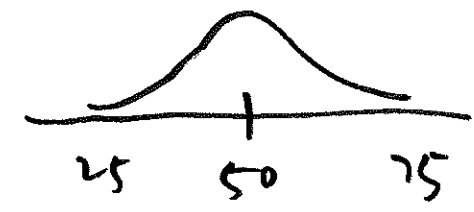
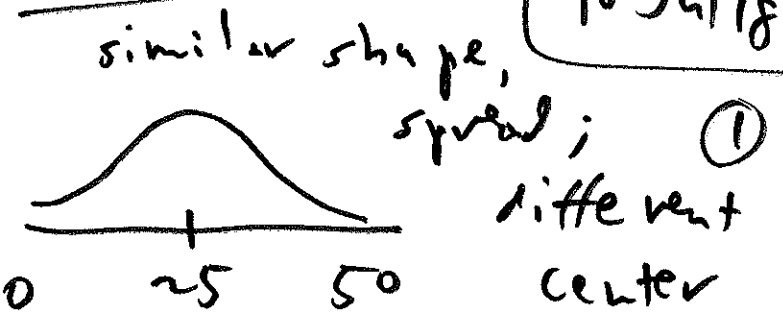


this time: expectation,
 next time: variance
 time: ↓

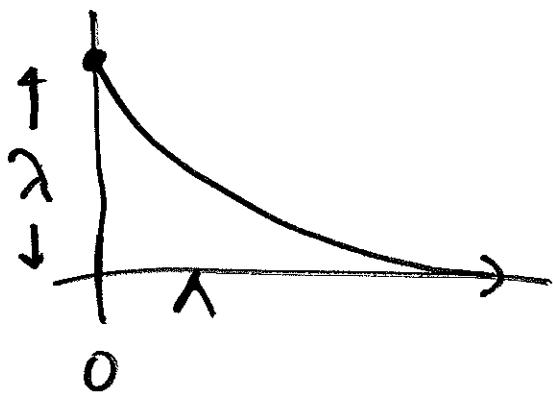
read: Dsch. 4 | AMS 131
 16 Jul 18



(9.50)

\mathbb{R} PMF $f_{\mathbb{R}}(x)$
 discrete RV

$$E(\mathbb{R}) = \sum_{\text{all } x} x \cdot P(\mathbb{R} = x)$$



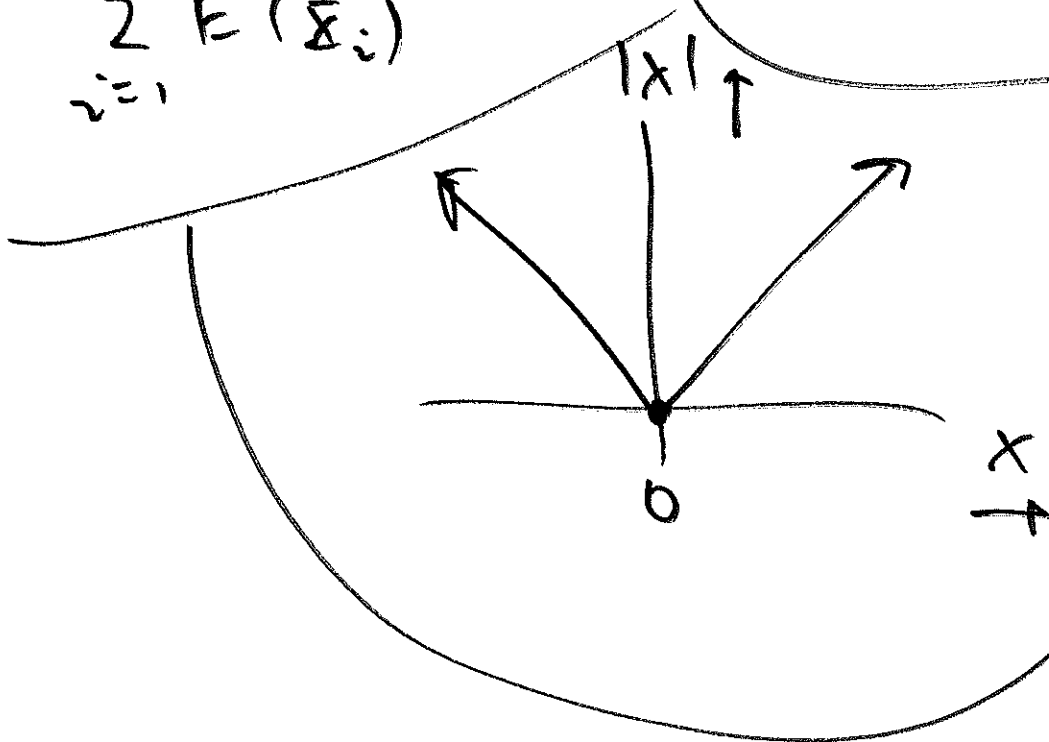
($X|\lambda$) ~ Exponential
(λ)

(2)

mode(X) = 0
(bad measure of center for reverse J-shaped dist.)

$$E\left(\sum_{i=1}^n X_i\right) = \sum_{i=1}^n E(X_i)$$

(10.47)



$$E(\mu^2) = \mu^2$$

$$E(-2\mu X) = -2\mu E(X)$$

$$E(aX + b) = aE(X) + b$$

$$V(c) = 0$$

constant

$$V(aX) = a^2 V(X) \quad (3)$$

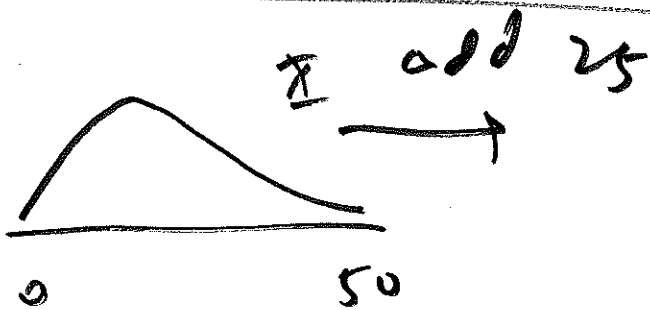
$$V(aX) = E[(aX)^2] - [E(aX)]^2$$

~~$E(aX)^2 = E(a^2 X^2) = a^2 E(X^2)$~~
 ~~$[E(aX)]^2 = [aE(X)]^2 = a^2 [E(X)]^2$~~

$$[E(aX)]^2 = [aE(X)]^2 = a^2 [E(X)]^2$$

$$V(aX) = a^2 E(X^2) - a^2 [E(X)]^2$$
$$= a^2 V(X)$$

$$SD(aX) = \sqrt{a^2 V(X)} = |a| SD(X)$$



$$X + 25 = \bar{X}$$



$$V(X_1 + X_2) = V(X_1) + V(X_2) \quad (4)$$

if X_1, X_2 independent

$$[SD(X_1 + X_2)]^2 = [SD(X_1)]^2 + [SD(X_2)]^2$$

