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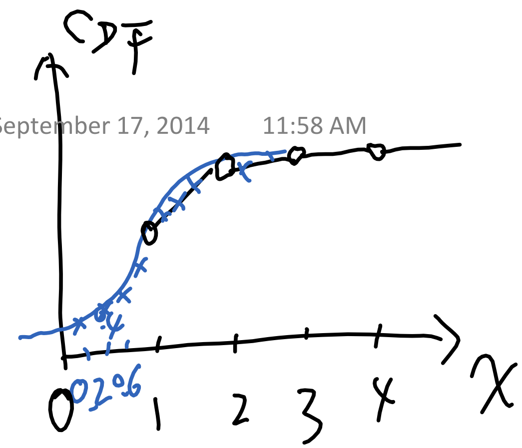

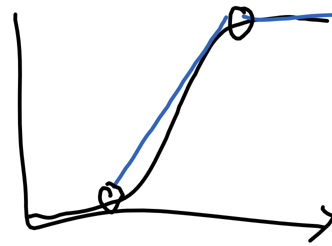

```
CDF_theory = RV;
for i = 1 : length(RV)
    CDF_theory(i) = 1 - exp(-λ*RV(i));
end
```

```
RV = 0:0.2:3;     Y = RV;
for i = 1 : length(RV),
    # of samples ≤ RV(i)
    Y(i) = #/1000;
end
plot(RV, Y);
```

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z	F(x)	z	F(x)	z	F(x)
-2.5	0.006	-1	0.159	0.5	0.691
-2.4	0.008	-0.9	0.184	0.6	0.726
-2.3	0.011	-0.8	0.212	0.7	0.758
-2.2	0.014	-0.7	0.242	0.8	0.788
-2.1	0.018	-0.6	0.274	0.9	0.816
-2	0.023	-0.5	0.309	1	0.841
-1.9	0.029	-0.4	0.345	1.1	0.864
-1.8	0.036	-0.3	0.382	1.2	0.885
-1.7	0.045	-0.2	0.421	1.3	0.903
-1.6	0.055	-0.1	0.46	1.4	0.919
-1.5	0.067	0	0.5	1.5	0.933
-1.4	0.081	0.1	0.54	1.6	0.945
-1.3	0.097	0.2	0.579	1.7	0.955
-1.2	0.115	0.3	0.618	1.8	0.964
-1.1	0.136	0.4	0.655	1.9	0.971

RV = -2.5:0.1:1.9;

CDF.theory = [0.006 0.008 0.011 ....

. . . . 0.971];

plot(RV, CDF_theory);

$$\text{var\_sim} = \frac{\sum_{i=1}^{n} (\bar{X} - x_i)^2}{n}$$

$$p = \frac{2}{5}$$

Mutation of example 3

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init: 3 W, 2 B. pick: pick one, throw it away

Q: among the first 3 picks. P(2 white picked)?

answer. three possible scenarios.

C_1	W	W	B
C_2	W	B	W
C_3	B	W	W

$$P(2W) = P(C_1) + P(C_2) + P(C_3)$$

$$P(C_1) = \frac{3}{5} \times \frac{2}{4} \times \frac{2}{3}, \quad P(C_2) = \frac{3}{5} \times \frac{2}{4} \times \frac{2}{3}$$

$$P(C_3) = \frac{2}{5} \times \frac{3}{4} \times \frac{2}{3}$$