

# STAT100 Elementary Statistics and Probability Summer II 2014

Quiz 5, Wednesday, July 30, 2014

Group Work

Group Members

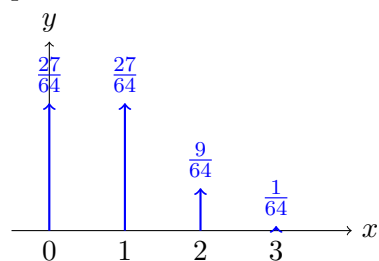
--	--	--	--

For each distribution given below, find the following quantities:

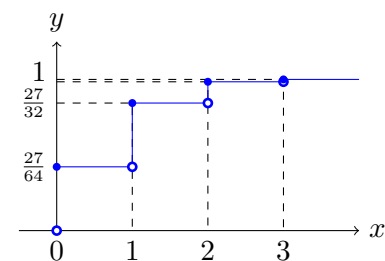
(a). Median, (b).  $Q_1$ , (c).  $P(0 \leq X \leq 1)$ , (d). Skewness (left, right or symmetric)..

**1.** Binomial distribution:  $\text{Binom}(3, 1/4)$ .

pmf



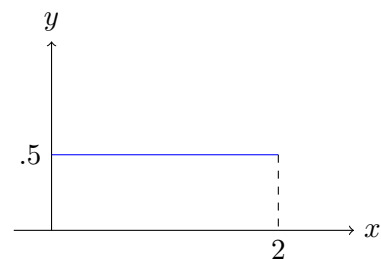
cdf



**2.** Uniform distribution:  $\text{Unif}(0, 2)$ .

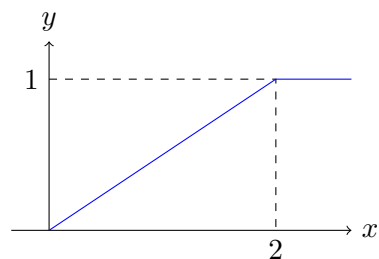
pdf

$$f(x) = \begin{cases} 1/2 & 0 \leq x \leq 2 \\ 0 & \text{otherwise} \end{cases}$$



cdf

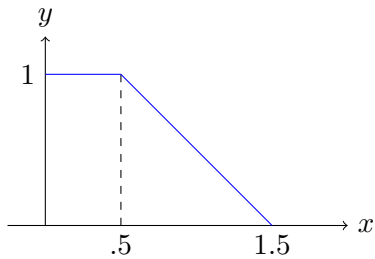
$$F(x) = \begin{cases} 0 & x < 0 \\ x/2 & 0 \leq x \leq 2 \\ 1 & x > 2 \end{cases}$$



### 3. Strange shaped.

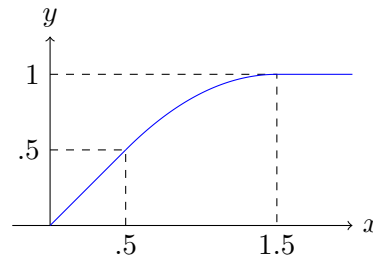
pdf

$$f(x) = \begin{cases} 1 & 0 \leq x \leq .5 \\ 1.5 - x & .5 < x \leq 1.5 \\ 0 & \text{otherwise} \end{cases}$$



cdf

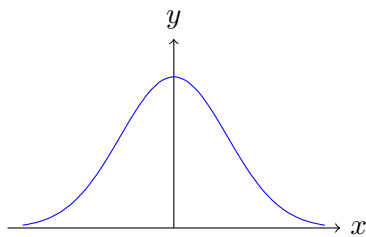
$$F(x) = \begin{cases} 0 & x < 0 \\ x & 0 \leq x < .5 \\ -.5x^2 + 1.5x - .125 & .5 \leq x < 1.5 \\ 1 & x \geq 1.5 \end{cases}$$



### 4. Normal distribution: $N(0,1)$ .

pdf

$$f(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$$



cdf

$f(x) = \Phi(x)$ , see table 3 in page 634 of the textbook.

