

1)

$$E(a\alpha + b) = aE(\alpha) + b$$

$$E(g(\alpha)) \in \mathbb{Z} \text{ gcm p cm.}$$

$$= \mathbb{Z}(\alpha + b) \text{ p cm.}$$

$$= \mathbb{Z} \text{ exp cm Heb p cm.}$$

$$= a \in \mathbb{Z} + b \in \mathbb{Z}$$

$$= aE(\alpha) + b$$

2)

$$P(\alpha) = \begin{cases} 0 & -\infty \leq \alpha < 1 \\ 0.1 & 1 \leq \alpha < 2 \\ 0.4 & 2 \leq \alpha < 3 \\ 0.8 & 3 \leq \alpha < 4 \\ 1 & 4 \leq \alpha \leq \infty \end{cases}$$

3)

i) Binomial probability

(ii)  $X \geq 0, 1$

(iii)

$$P(X=1) = \binom{3}{1} (0.12)^1 (0.88)^2$$

$$= 0.279$$

(100)

# jupyter Untitled Last Checkpoint: an hour ago (autosaved)

File Edit View Insert Cell Kernel Help

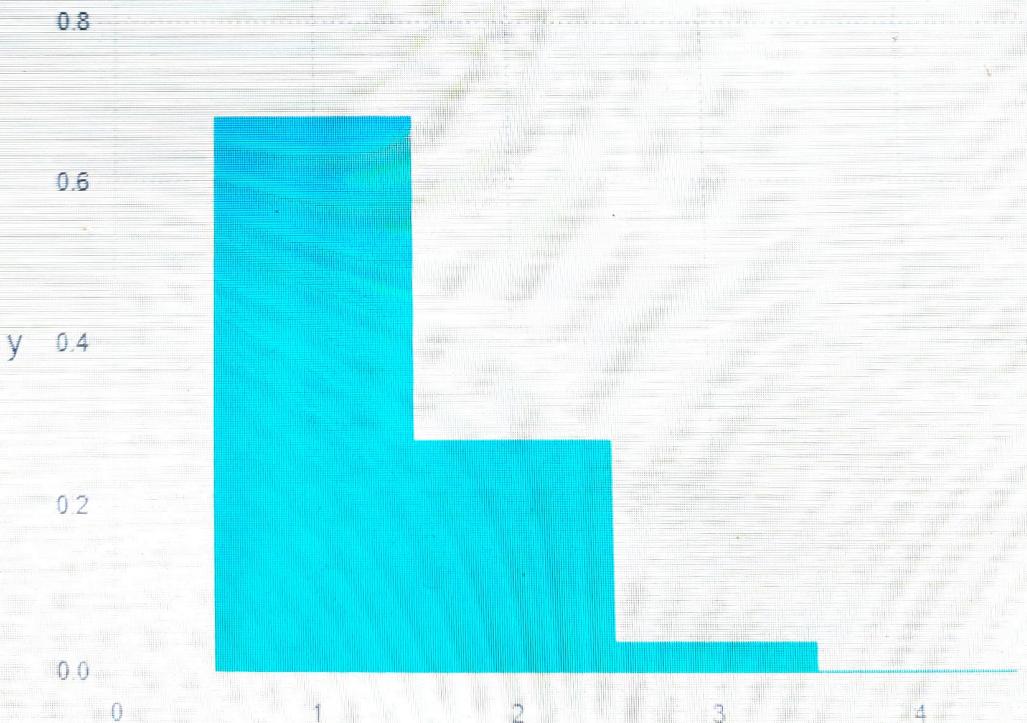


WARNING: pdf(d::DiscreteUnivariateDistribution) is deprecated, use pdf.(d, support(d)) instead.

Stacktrace:

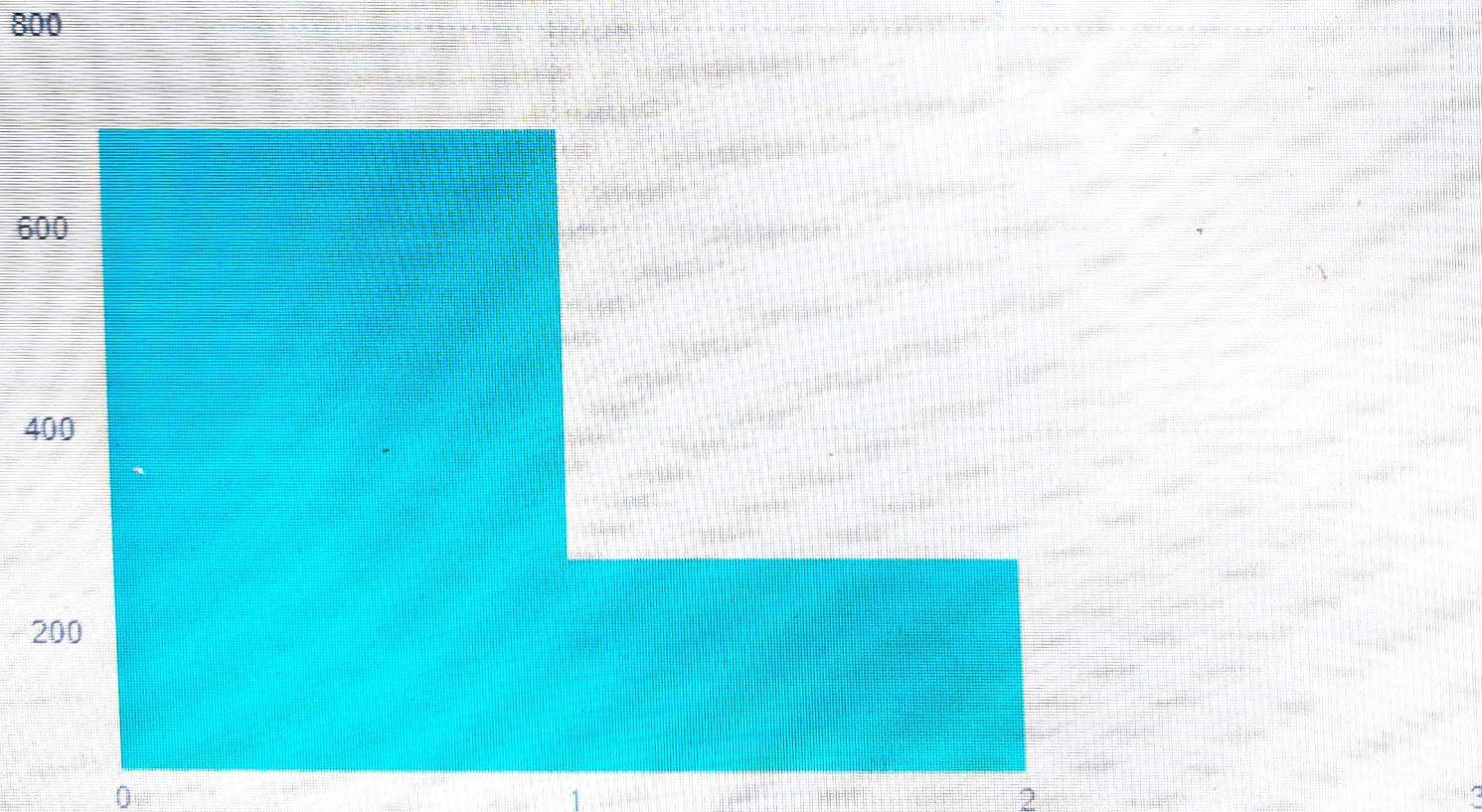
```
[1] depwarn(::String, ::Symbol) at ./deprecated.jl:70
[2] pdf(::Distributions.Binomial{Float64}) at ./deprecated.jl:57
[3] include_string(::String, ::String) at ./loading.jl:522
[4] include_string(::Module, ::String, ::String) at /users/PES0801/nifaullah/.julia/v0.6/Compat/src/Co
[5] execute_request(::ZMQ.Socket, ::IJulia.Msg) at /usr/local/julia/0.6.4/site/v0.6/IJulia/src/execute
[6] (::Compat.#inner#6{Array{Any,1},IJulia.#execute_request,Tuple{ZMQ.Socket,IJulia.Msg}})() at /users
a/v0.6/Compat/src/Compat.jl:125
[7] eventloop(::ZMQ.Socket) at /usr/local/julia/0.6.4/site/v0.6/IJulia/src/eventloop.jl:8
[8] (::IJulia.##15#18)() at ./task.jl:335
while loading In[20], in expression starting on line 1
```

Out[20]:



```
In [15]: plot(x = data, Geom.histogram(bincount=length(unique(data))))
```

```
Out[15]:
```



```
In [34]: p = Poisson(0.5)  
data1 = rand(p, 1000)
```

(i) (a).

(iv).

(i). poisson  $\lambda = 0.5$ .

(ii)  $X = 0, 1, 2, \dots, \infty$ .

(iii)

$$P(X > 5) = 1 - P(X \leq 4)$$

$$= 1 - \left[ \frac{0.5^0 e^{-0.5}}{0!} + \frac{0.5^1 e^{-0.5}}{1!} \right.$$

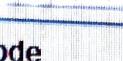
$$\left. + \frac{0.5^2 e^{-0.5}}{2!} + \frac{0.5^3 e^{-0.5}}{3!} \right]$$

$$+ \frac{0.5^4 e^{-0.5}}{4!}$$

$$z = e^{-0.5} \left[ \frac{1}{0!} + 0.5 + \frac{0.5^2}{2!} + \frac{0.5^3}{3!} + \frac{0.5^4}{4!} \right]$$

~~$$= e^{-0.5} (1.601 \times 1.648)$$~~

$$z = 0.00017.$$



Code



0.000157951

1.31626e-5

9.40183e-7

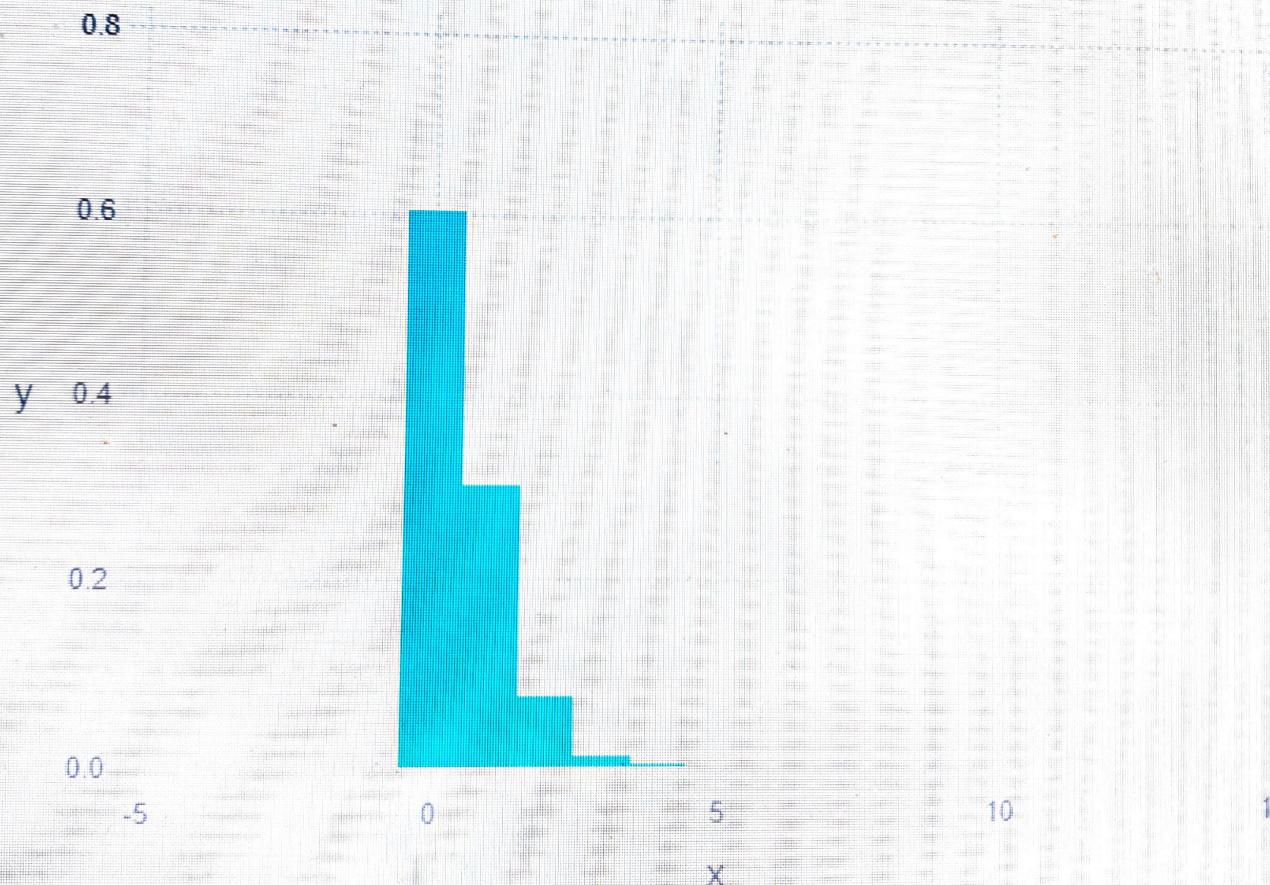
5.87614e-8

3.26452e-9

1.63226e-10

In [53]: `plot(x= 0:10, y = prob, Geom.bar)`

Out[53]:



Type here to search



```
In [29]: plot(x = data1, Geom.histogram(bincount=length(unique(data1))))
```

Out[29]:

