Stochastic immigration-emigration process: Equilibrium distribution

Simulation by C

In[217]:=
```
SetDirectory["/Users/takasu/home/情報科学科の仕事/講義/平成２６年度/H26 大学院講義/Immigration model/
```

Out[217]=
```
/Users/takasu/home/情報科学科の仕事/講義/平成２６年度/H26 大学院講義/Immigration
  model/immigration-migration/DerivedData/immigration-migration/Build/Products/
  Development
```

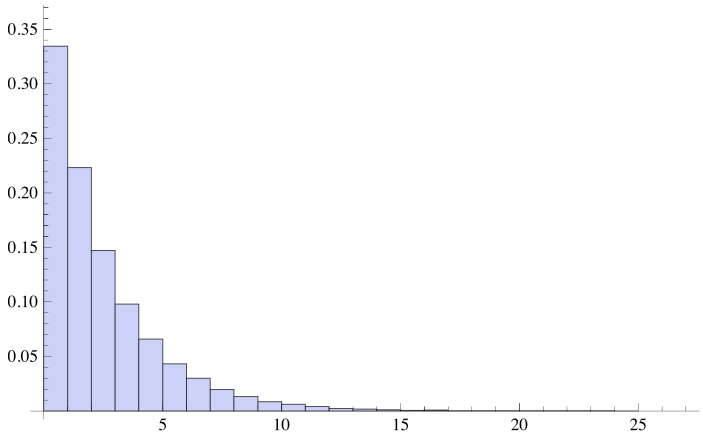
In[218]:=
```
data = ReadList["data-eqm", Real];
len = Length[data]
max = Max[data]
```

Out[219]= 100 000

Out[220]= 27.

In[221]:=
```
g1 = Histogram[data, {0, max, 1}, "PDF"]
```

Out[221]=



In[222]:=
```
mean = Apply[Plus, data] / len
```

Out[222]= 1.99285

In[223]:=
```
variance = Apply[Plus, (data - mean)^2] / len
```

Out[223]= 5.98384

In[224]:=
```
para = {a → 0.2, b → 0.3}
```

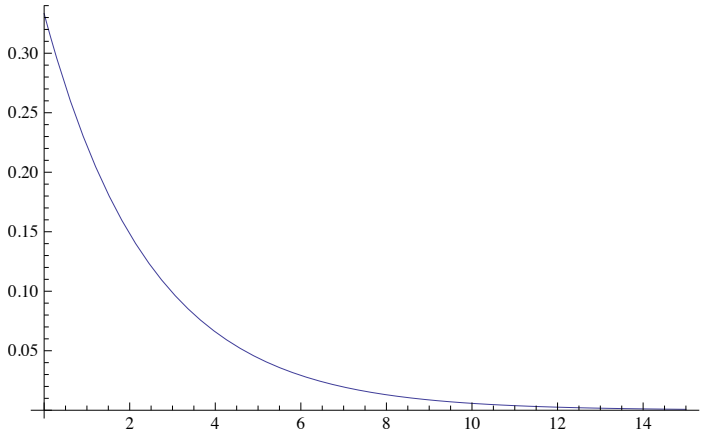
Out[224]= {a → 0.2, b → 0.3}

In[225]:=
```
distAnalytic = (a / b)^n (b - a) / b /. para
```

Out[225]= $0.333333 \times 0.666667^{n}$

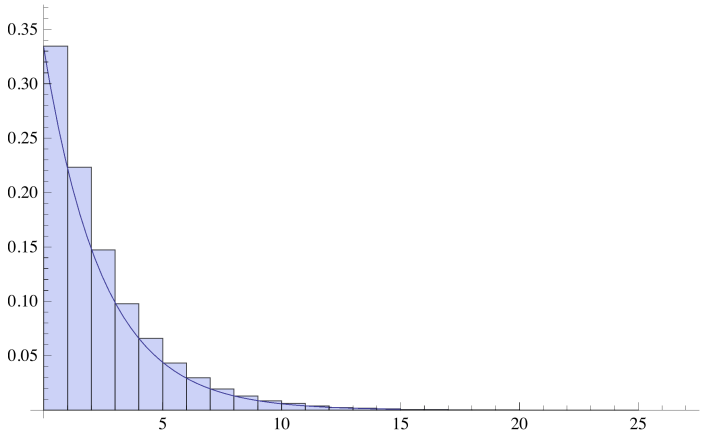
In[226]:=
```
g2 = Plot[ distAnalytic, {n, 0, 15}]
```

Out[226]=



In[227]:=
```
Show[g1, g2]
```

Out[227]=



In[228]:=
```
a / (b - a) /. para
```

Out[228]=
```
2.
```

In[229]:=
```
a b / (b - a)^2 /. para
```

Out[229]=
```
6.
```