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```
function U=rand5(a,b)
U=a+(b-a).*rand(1)
end
```

```
function outcome = generateRandomCoinFlip(X)
u = rand;
if u <= X
    coinFlip=1;
    outcome=coinFlip;
else
    coinFlip=0;
    outcome=coinFlip;
end
```

```
function [X,Y]=coinsimulation(a,b)
X=a+(b-a).*rand(1);
u=rand;
outcomes=zeros(10,1);
for i=1:10
    outcomes(i)=generateRandomCoinFlip(X);
end
Y=nnz(outcomes);
end
```

```
function graph=pdfgraph(a,b)
p=@(x) 1/sqrt(2*pi)*exp(-(x.^2)/2);
x=linspace(a,b);
plot(x,p(x));
end
```

