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> #Deven Singh, Assignment 7, 09/27/2021
#NOT OK TO SUBMIT
#I had lots of trouble with Qs 2-4 on this assignment and cannot
#provide answers acceptable for submission. I will come to office
#hours to learn how to complete the aforementioned problems.
#GRt(p,i,N): A terse version of GR(p,i,N). Returns [0,c] or [1,c], where c is the number of rounds
with(Statistics) :
GRt := proc(p, i, N) local X, x, d, c :
X := RandomVariable(Bernoulli(p)) :
c := 0 :
x := i :
while x > 0 and x < N do
c := c + 1 :
d := trunc(Sample(X, 1)[1]) :
if d = 0 then
x := x - 1 :
else
x := x + 1 :
fi:
od:
if x = 0 then
RETURN([0, c]) :
elif x = N then
RETURN([1, c]) :
fi:
end:

> EstGR := proc(p, i, N, K) local e, f, g :
e := add(x^GRt(p, i, N) [1], a = 1 ..K) :
f := coeff(e, x, 1) :
g := coeff(e, x, 0) :
RETURN( [ [ f, evalf( (add(GRt(p, i, N) [2], b = 1 ..K) ) / K ) ] ] );
end:

>
> EstGR(.45, 5, 10, 100);
[ 8/17, 25.14000000 ]
>

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(1)