

The file exact912 (Maxima program)

```
kill(all);
k : 3;
sum : 0;
  for i : 0 step 1 thru k do(
    term : binomial(100,i)*.005^i*(1-.005)^(100-i),
    sum : float(sum+term));
goodbox : sum;
badbox : 1-goodbox;
trial : 10000;
k : 25;
sum : 0;
  for i : 0 step 1 thru k do(
    term : binomial(10000,i)*badbox^i*goodbox^(10000-i),
    sum : float(sum+term));
badboxtoofew : sum;
badboxtoomany : 1-badboxtoofew;
```

The output of the Maxima program exact912

```
Maxima 5.38.1 http://maxima.sourceforge.net
using Lisp GNU Common Lisp (GCL) GCL 2.6.12
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Dedicated to the memory of William Schelter.
The function bug_report() provides bug reporting information.
(%i1) batch("exact912")
```

```
read and interpret file: #p/home/mate/exams/fl8/maxima/81/exact912
(%i2) kill(all)
(%o0) done
(%i1) k:3
(%o1) 3
(%i2) sum:0
(%o2) 0
(%i3) for i from 0 thru k do
      (term:binomial(100,i)*0.005^i*(1-0.005)^(100-i),sum:float(sum+term))
(%o3) done
(%i4) goodbox:sum
(%o4) 0.9983267324769446
(%i5) badbox:1-goodbox
(%o5) 0.00167326752305541
(%i6) trial:10000
(%o6) 10000
(%i7) k:25
(%o7) 25
(%i8) sum:0
(%o8) 0
(%i9) for i from 0 thru k do
      (term:binomial(10000,i)*badbox^i*goodbox^(10000-i),
      sum:float(sum+term))
(%o9) done
(%i10) badboxtoofew:sum
(%o10) 0.9787140181842539
(%i11) badboxtoomany:1-badboxtoofew
(%o11) 0.02128598181574614
(%o11) exact912
```