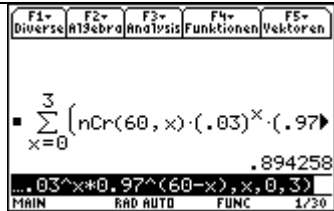


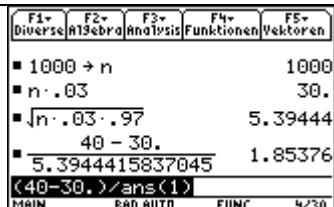
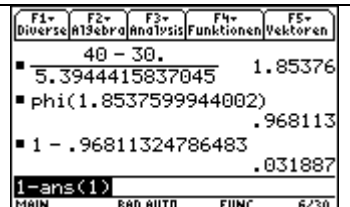
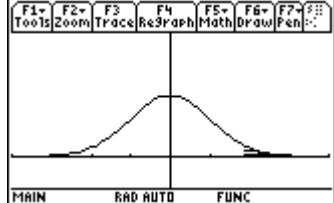
Stochastik IV: Maturaufgabe

Lösungen

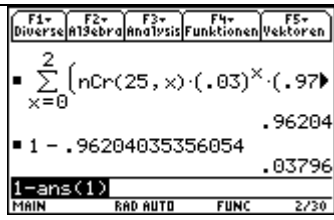
1) Binomialverteilung

Summiere von 0 bis 3	
----------------------	------------------------------------------------------------------------------------

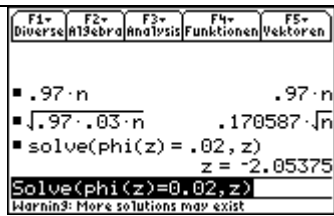
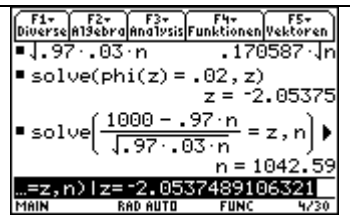
2) Normalverteilung

<p>n = 1000 p = 0.03, $\mu = 30$, $\sigma = 5.394$ z = 1.854 $\Phi(z) = 0.968$ und das Gegenteil Also 3.19 %</p>		
Die 3.19 % sind als Fläche in der Verteilungskurve schraffiert		

3) Hypothesentest

<p>$H_0: p = 0.03$ $H_1: p > 0.03$ Teste 25 Stück aus einer Massen- sendung, d.h. binomialverteilt. W'keit für Annahme: 96.2 % W'keit für Ablehnung: 3.8 % Das ist ein Fehler 1. Art.</p>	
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------

4) Anzahl Kügelchen

<p>n gesucht ("Overbooking"-Problem) p = 0.97 $\mu = 0.97n$, $\sigma = 0.17\sqrt{n}$ z = -2.05 Löse $\frac{1000 - \mu}{\sigma} = z$ nach n auf. Also 1043 Kügelchen</p>		
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------