APPROXIMATION DER ZETA-FUNKTION IN (2,3) MIT N=4

ERMITTLUNG DER STARTFUNKTION:

MIT X0=2.100, X7=2.800, H=0.1 ERHAELT MAN:

A1=0.31832228982460+04 T1=-0.65331558992390+01
A2=0.56338107596040+02 T2=-0.30977129535050+01
A3=0.45165006857610+01 T3=-0.11518317991240+01
A4=0.11089173003010+01 T4=-0.16846093065880-01

(ZEICHNUNG 82,82A)

1.ITERATIONSSCHRITT

DIE PUNKTMENGE:

X0=2.00000000 X1=2.12890625 X2=2.23437500
X3=2.33984375 X4=2.44531250 X5=2.55078125
X6=2.66015625 X7=2.76562500 X8=3.00000000

ERSTER SCHRITT NACH NEWTON ERGIBT:

A1=0.35052720736240+04 T1=-0.66098335381360+01
A2=0.57781441808270+02 T2=-0.31119770780910+01
A3=0.45308354185840+01 T3=-0.11523467328810+01
A4=0.11083466628380+01 T4=-0.16719304673270-01

F0= 0.59332520-04 F1= 0.32645430-04 F2= 0.20858040-04
F3= 0.13733790-04 F4= 0.92683240-05 F5= 0.63649110-05
F6= 0.43831090-05 F7= 0.30932360-05 F8= 0.15080730-05

(ZEICHNUNG 83)

ZWEITER SCHRITT NACH NEWTON ERGIBT:

A1=0.35208842404550+04 T1=-0.66090097292610+01
A2=0.57725223700190+02 T2=-0.31111370175190+01
A3=0.45289352961970+01 T3=-0.11521673324090+01
A4=0.11082908903790+01 T4=-0.16709942358330-01

F0= 0.73868580-08 F1= 0.16093650-07 F2= 0.22315160-07
F3= 0.17358690-07 F4= 0.13576750-07 F5= 0.13384790-07
F6= 0.15485540-07 F7= 0.96881200-08 F8= 0.10864580-07

(ZEICHNUNG 84)

DRITTER SCHRITT NACH NEWTON ERGIBT:

A1=0.35208880029170+04 T1=-0.6690150490310+01
A2=0.5772527247050D+02 T2=-0.3111137113405D+01
A3=0.4528934251296D+01 T3=-0.1152167194449D+01
A4=0.1108290843614D+01 T4=-0.1670933463928D-01

F0= 0.2054090D-08 F1= -0.2054471D-08 F2= 0.2054293D-08
F3= -0.2054381D-08 F4= 0.2054338D-08 F5= -0.2054355D-08
F6= 0.2054351D-08 F7= -0.2054349D-08 F8= 0.2054353D-08

(ZEICHNUNG 85)

2.ITERATIONSSCHRITT

DIE PUNKTMENGE:

X0=2.00000000 X1=2.03515625 X2=2.17187500
X3=2.29687500 X4=2.42968750 X5=2.56640625
X6=2.70703125 X7=2.92968750 X8=3.00000000

ERSTER SCHRITT NACH NEWTON ERGIBT:

A1=0.3740608448447D+04 T1=-0.6656724322835D+01
A2=0.5862839984774D+02 T2=-0.3119791763125D+01
A3=0.4537063696040D+01 T3=-0.1152427432133D+01
A4=0.1107942534838D+01 T4=-0.1663412203114D-01

F0= 0.2222139D-04 F1= 0.1873151D-04 F2= 0.1013077D-04
F3= 0.6016246D-05 F4= 0.3637668D-05 F5= 0.2206706D-05
F6= 0.1376240D-05 F7= 0.6514897D-06 F8= 0.5371176D-06

(ZEICHNUNG 86)

ZWEITER SCHRITT NACH NEWTON ERGIBT:

A1=0.3747253527979D+04 T1=-0.6656423718095D+01
A2=0.5860704817636D+02 T2=-0.3119476692581D+01
A3=0.4536353465773D+01 T3=-0.1152360468467D+01
A4=0.1107921745854D+01 T4=-0.1663063523281D-01

F0= 0.1150670D-07 F1= -0.8151048D-08 F2= 0.1303448D-07
F3= -0.7250613D-08 F4= 0.1266669D-07 F5= -0.8012910D-08
F6= 0.1190581D-07 F7= -0.8802275D-08 F8= 0.1136060D-07

(ZEICHNUNG 87)

DRITTER SCHRITT NACH NEWTON ERGIBT:

A1=0.3747254034684D+04 T1=-0.6656424426481D+01
A2=0.5860705536345D+02 T2=-0.3119476708963D+01
A3=0.4536353325376D+01 T3=-0.1152360449787D+01
A4=0.1107921739543D+01 T4=-0.1663063419280D-01

F0= 0.1013844D-07 F1= -0.1013845D-07 F2= 0.1013844D-07
F3= -0.1013845D-07 F4= 0.1013845D-07 F5= -0.1013845D-07
F6= 0.1013845D-07 F7= -0.1013845D-07 F8= 0.1013845D-07

(ZEICHNUNG 88)

3.ITERATIONSSCHRITT

DIE PUNKTMENGE:

X0=2.00000000 X1=2.01953125 X2=2.10546875
X3=2.25390625 X4=2.41406250 X5=2.58984375
X6=2.80078125 X7=2.95703125 X8=3.00000000

ERSTER SCHRITT NACH NEWTON ERGIBT:

A1=0.3834650840181D+04 T1=-0.6676306355945D+01
A2=0.5933880334829D+02 T2=-0.3128717423846D+01
A3=0.4563849944080D+01 T3=-0.1155246873376D+01
A4=0.1109035491800D+01 T4=-0.1682379437089D-01

F0= 0.1604918D-04 F1= 0.1520070D-04 F2= 0.1224407D-04
F3= 0.8677781D-05 F4= 0.6285579D-05 F5= 0.4528517D-05
F6= 0.3221406D-05 F7= 0.2502679D-05 F8= 0.2377903D-05

(ZEICHNUNG 89)

ZWEITER SCHRITT NACH NEWTON ERGIBT:

A1=0.3836144904601D+04 T1=-0.6676330447894D+01
A2=0.5934131228610D+02 T2=-0.3128630422623D+01
A3=0.4563710575133D+01 T3=-0.1155223842842D+01
A4=0.1109026048886D+01 T4=-0.1682218942353D-01

F0= 0.1597092D-07 F1= -0.1638456D-07 F2= 0.1594914D-07
F3= -0.1636989D-07 F4= 0.1602197D-07 F5= -0.1628373D-07
F6= 0.1609444D-07 F7= -0.1623322D-07 F8= 0.1611126D-07

(ZEICHNUNG 90)

AUSWERTUNG DER FEHLERFUNKTION:

DIE NULLSTELLEN	LOKALE EXTREMA UND FUNKTIONSWERTE		
	2.0000		+1.5971D-8
2.00605 (1.5D-4)			
	2.0262	(2.7D-3)	-1.7931D-8
2.06040 (4.0D-4)			
	2.1046	(5.7D-3)	+1.5955D-8
2.16040 (6.0D-4)			
	2.2328	(6.4D-3)	-1.7830D-8
2.31710 (8.0D-4)			
	2.4054	(9.2D-3)	+1.6191D-8
2.50140 (7.0D-4)			
	2.6028	(8.8D-3)	-1.6618D-8
2.70370 (7.0D-4)			
	2.7968	(8.2D-3)	+1.6135D-8
2.87785 (6.5D-4)			
	2.9445	(3.9D-3)	-1.7481D-8
2.98655 (1.5D-4)			
	3.0000		+1.6111D-8

APPROXIMATION DER ZETA-FUNKTION IN [2,4] MIT N=4

ERMITTLUNG DER STARTFUNKTION:

MIT X0=2.050 X7=3.600, H=0.221 ERHAELT MAN:

A1=0.9282065854313D+03 T1=-0.5450933513463D+01
A2=0.2709444300685D+02 T2=-0.2561189494429D+01
A3=0.3067446916207D+01 T3=-0.9802602589742D+00
A4=0.1048520425323D+01 T4=-0.6758602513908D-02

(ZEICHNUNG 31,31A)

1.ITERATIONSSCHRITT

DIE PUNKTMENGE:

X0=2.00000000 X1=2.10937500 X2=2.34375000
X3=2.57812500 X4=2.81250000 X5=3.04687500
X6=3.28125000 X7=3.52343750 X8=4.00000000

ERSTER SCHRITT NACH NEWTON ERGIBT:

A1=0.1105512023666D+04 T1=-0.5534628429578D+01
A2=0.2864235816036D+02 T2=-0.2590879449291D+01
A3=0.3094309065399D+01 T3=-0.9819027534626D+00
A4=0.1047888861281D+01 T4=-0.6624166459520D-02

F0= 0.4361008D-03 F1= 0.2768648D-03 F2= 0.1170472D-03
F3= 0.5540765D-04 F4= 0.2823304D-04 F5= 0.1474367D-04
F6= 0.8207185D-05 F7= 0.4480724D-05 F8= 0.2079709D-05

(ZEICHNUNG 92)

ZWEITER SCHRITT NACH NEWTON ERGIBT:

A1=0.1123498654506D+04 T1=-0.5591935794893D+01
A2=0.2853177491107D+02 T2=-0.2587606347650D+01
A3=0.3033707950737D+01 T3=-0.9812630727846D+00
A4=0.1047746543982D+01 T4=-0.6602349430573D-02

F0= -0.1787476D-06 F1= -0.5709922D-07 F2= 0.3444932D-06
F3= 0.1113230D-06 F4= 0.2742831D-06 F5= 0.2821563D-07
F6= 0.2131757D-06 F7= -0.1633116D-07 F8= 0.1641896D-06

(ZEICHNUNG 93)

DRITTER SCHRITT NACH NEWTON ERGIBT:

A1=0.11235151656330+04 T1=-0.55913369213140+01
A2=0.28532267973530+02 T2=-0.25876094387620+01
A3=0.30886946797550+01 T3=-0.98126037457650+00
A4=0.10477460312240+01 T4=-0.66028748680120-02

F0= 0.10496530-06 F1= -0.10507530-06 F2= 0.10502650-06
F3= -0.10503590-06 F4= 0.10503750-06 F5= -0.10503390-06
F6= 0.10503700-06 F7= -0.10503480-06 F8= 0.10503600-06

(ZEICHNUNG 94)

2.ITERATIONSSCHRITT

DIE PUNKTMENGE:

X0=2.00000000 X1=2.04296875 X2=2.20703125
X3=2.46875000 X4=2.75000000 X5=3.05078125
X6=3.36718750 X7=3.83203125 X8=4.00000000

ERSTER SCHRITT NACH NEWTON ERGIBT:

A1=0.12089813696570+04 T1=-0.56495292504900+01
A2=0.29125511896180+02 T2=-0.25975827916530+01
A3=0.30928204325550+01 T3=-0.98103453853460+00
A4=0.10472523551170+01 T4=-0.65143509429750-02

F0= 0.64082600-04 F1= 0.52166600-04 F2= 0.26772540-04
F3= 0.98094290-05 F4= 0.44637880-05 F5= 0.11933310-05
F6= 0.89185160-06 F7= -0.29571980-06 F8= 0.39907260-06

(ZEICHNUNG 95)

ZWEITER SCHRITT NACH NEWTON ERGIBT:

A1=0.12124165195300+04 T1=-0.56491942368550+01
A2=0.29107510929100+02 T2=-0.25970917905750+01
A3=0.30920254616240+01 T3=-0.98094502320680+00
A4=0.10472321236660+01 T4=-0.65113227846450-02

F0= 0.36915880-06 F1= -0.36370610-06 F2= 0.37569480-06
F3= -0.36087060-06 F4= 0.37229890-06 F5= -0.36468470-06
F6= 0.36989870-06 F7= -0.36629560-06 F8= 0.36895840-06

(ZEICHNUNG 96)

3.ITERATIONSSCHRITT

DIE PUNKTMENGE:

X0=2.00000000 X1=2.03906250 X2=2.16015625
X3=2.38671875 X4=2.70312500 X5=3.07031250
X6=3.50781250 X7=3.87109375 X8=4.00000000

ERSTER SCHRITT NACH NEWTON ERGIBT:

A1=0.12060722183790+04 T1=-0.56455762483900+01
A2=0.29081049897600+02 T2=-0.25967079608760+01
A3=0.30921537937950+01 T3=-0.98101001233740+00
A4=0.10472821422140+01 T4=-0.65201480626410-02

F0= 0.68857010-06 F1= -0.25066490-06 F2= 0.55377520-06
F3= -0.41024160-06 F4= 0.45797630-06 F5= -0.44451430-06
F6= 0.44772300-06 F7= -0.44745530-06 F8= 0.44722410-06

(ZEICHNUNG 97)

ZWEITER SCHRITT NACH NEWTON ERGIBT:

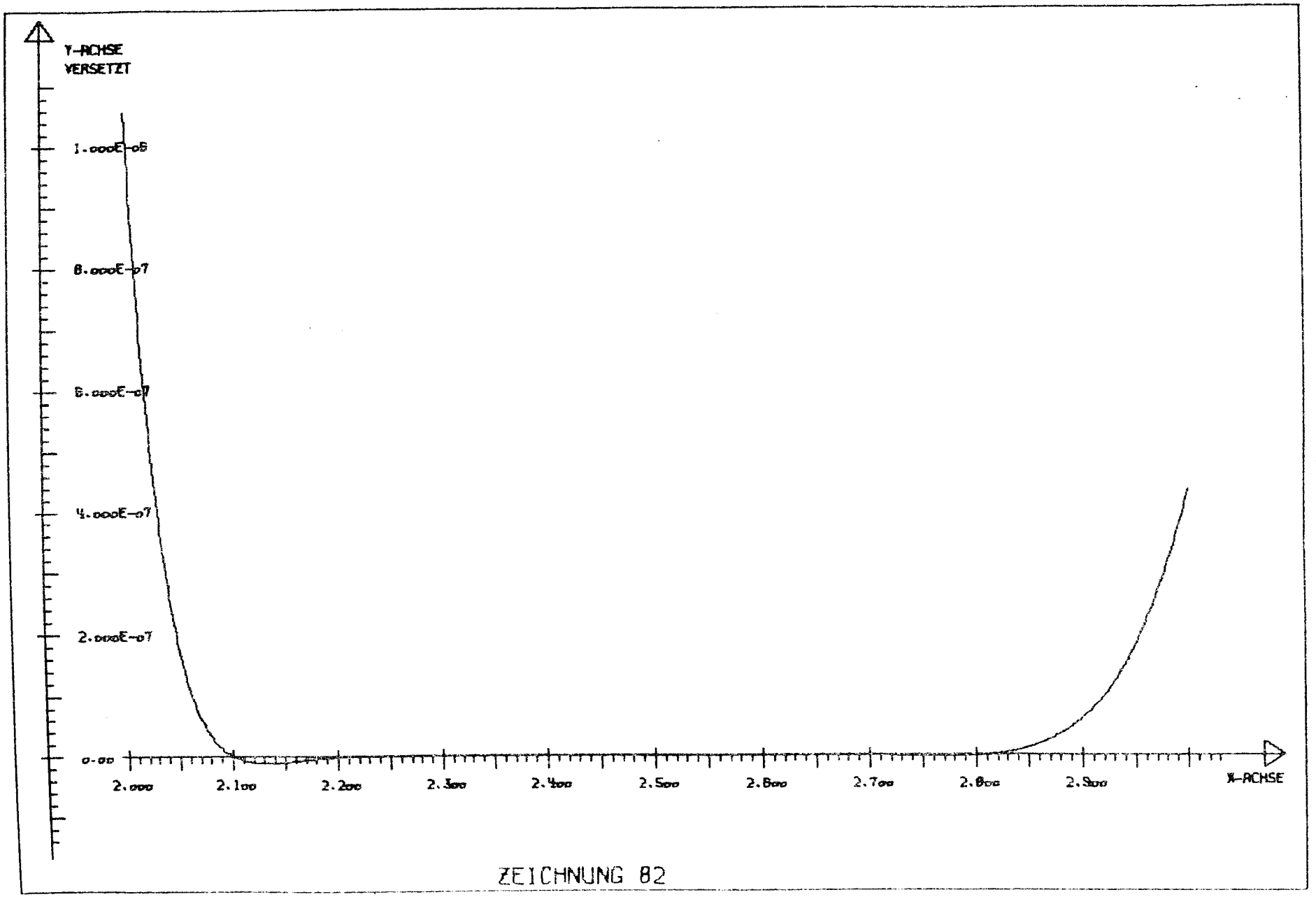
A1=0.12060866040440+04 T1=-0.56455733528350+01
A2=0.29080969399720+02 T2=-0.25967061753830+01
A3=0.30921511312310+01 T3=-0.98100970761960+00
A4=0.10472820692430+01 T4=-0.65201369387680-02

F0= 0.44735310-06 F1= -0.44735410-06 F2= 0.44735360-06
F3= -0.44735360-06 F4= 0.44735380-06 F5= -0.44735370-06
F6= 0.44735380-06 F7= -0.44735370-06 F8= 0.44735370-06

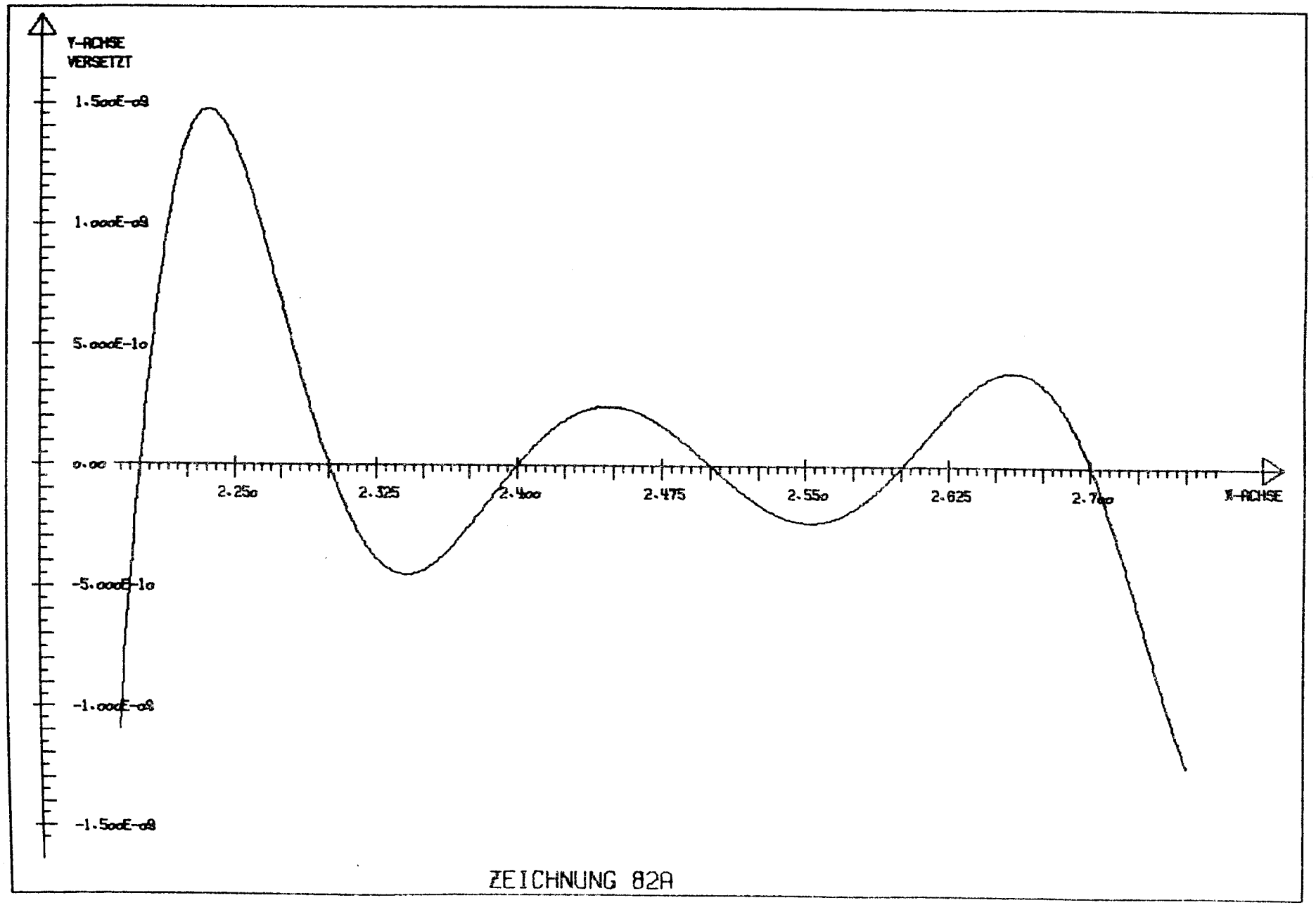
(ZEICHNUNG 98)

AUSWERTUNG DER FEHLERFUNKTION:

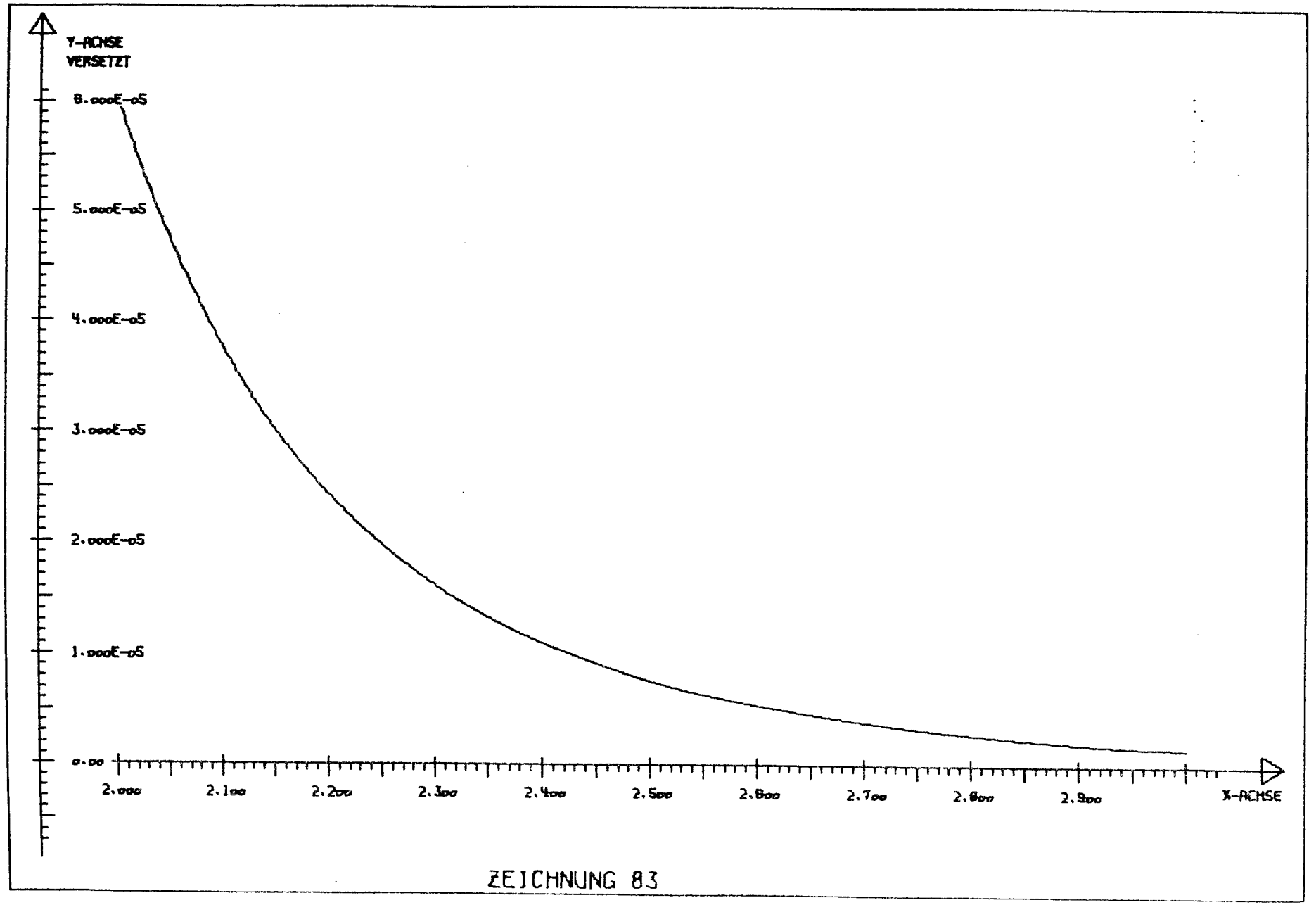
DIE NULLSTELLEN	I	LOKALE EXTREMA UND FUNKTIONSWERTE	
	I	2.0000	+4.473530-7
2.010266 (0.80-5)	I		
	I	2.0412 (0.80-3)	-4.490020-7
2.093439 (2.30-5)	I		
	I	2.1676 (2.30-3)	+4.517440-7
2.264553 (3.30-5)	I		
	I	2.3840 (2.80-3)	-4.475830-7
2.526824 (4.00-5)	I		
	I	2.6928 (3.20-3)	+4.492270-7
2.879584 (4.40-5)	I		
	I	3.0832 (3.20-3)	-4.494270-7
3.296185 (3.10-5)	I		
	I	3.5068 (2.80-3)	+4.473680-7
3.700142 (2.40-5)	I		
	I	3.8590 (1.40-3)	-4.513700-7
3.963697 (0.50-5)	I		
	I	4.0000	+4.473540-7



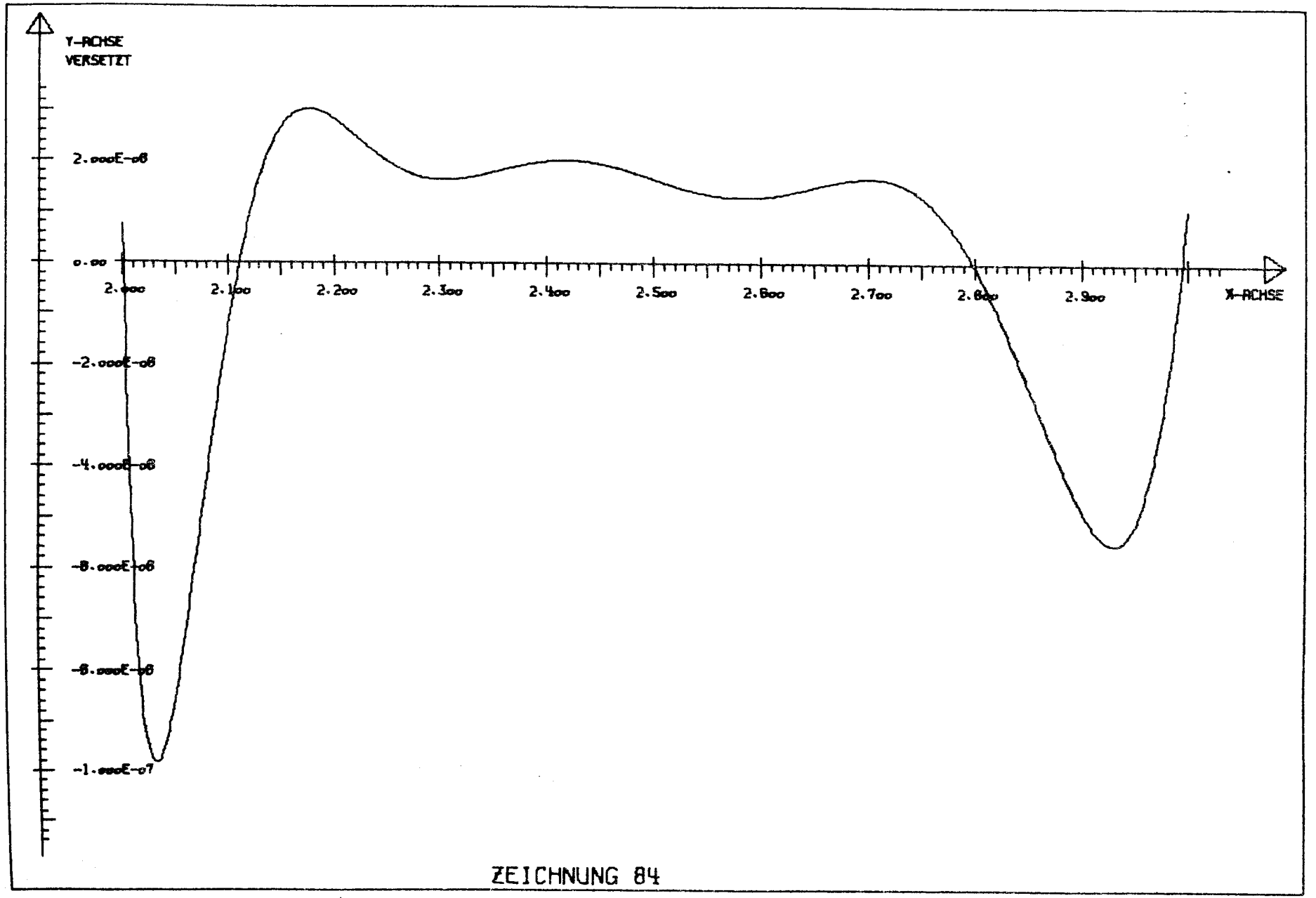
ZEICHNUNG 82



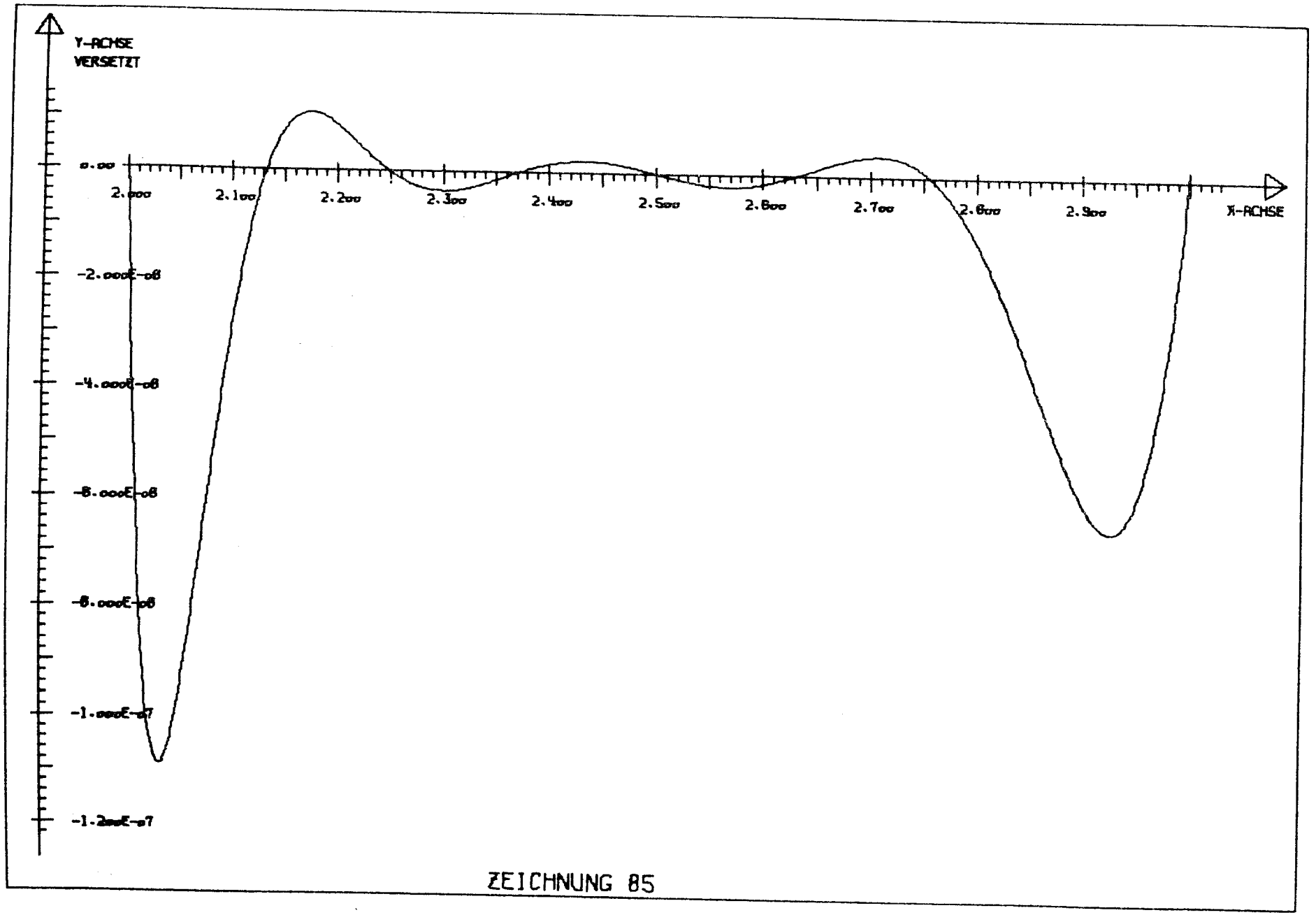
ZEICHNUNG 82A



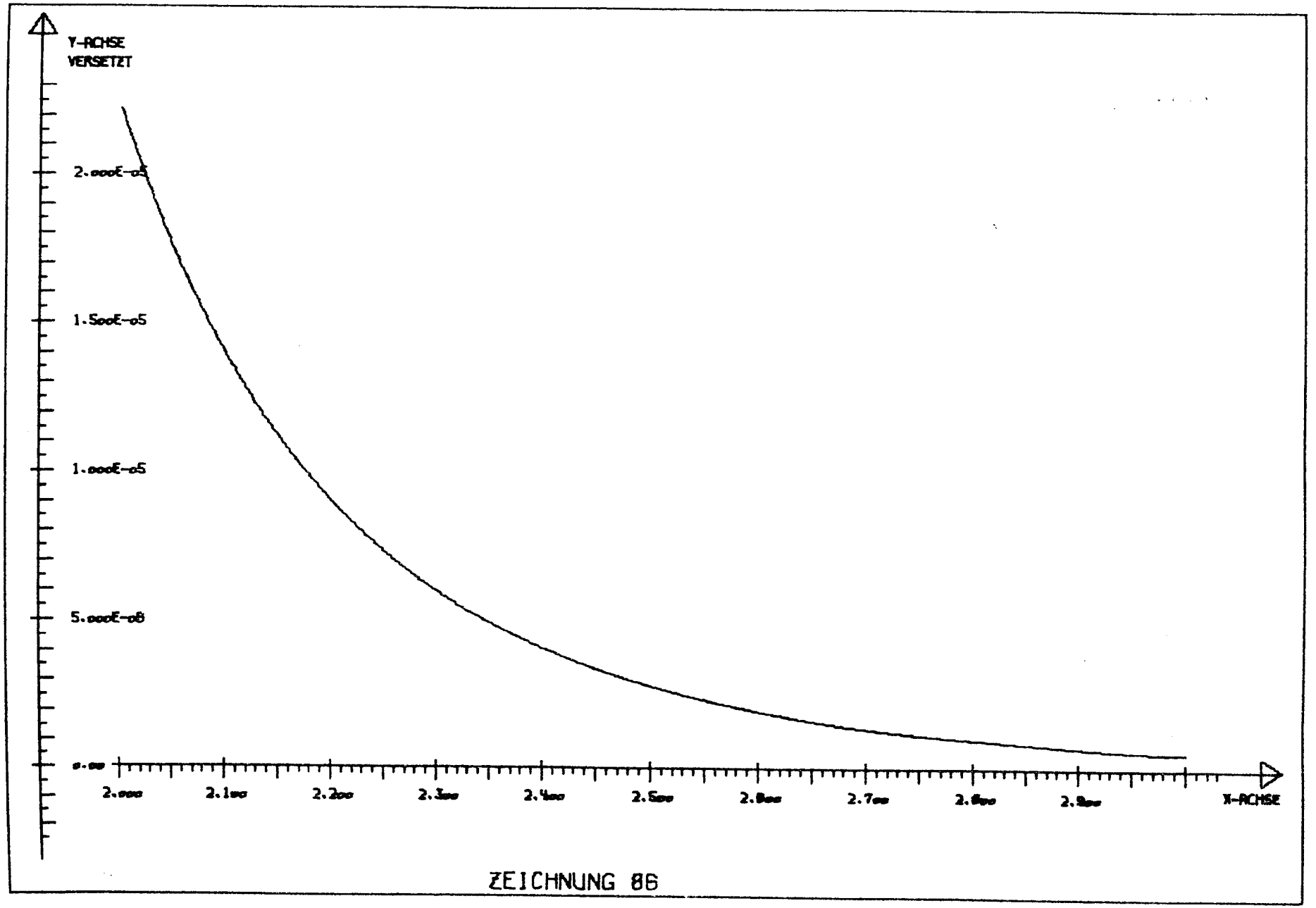
ZEICHNUNG 83



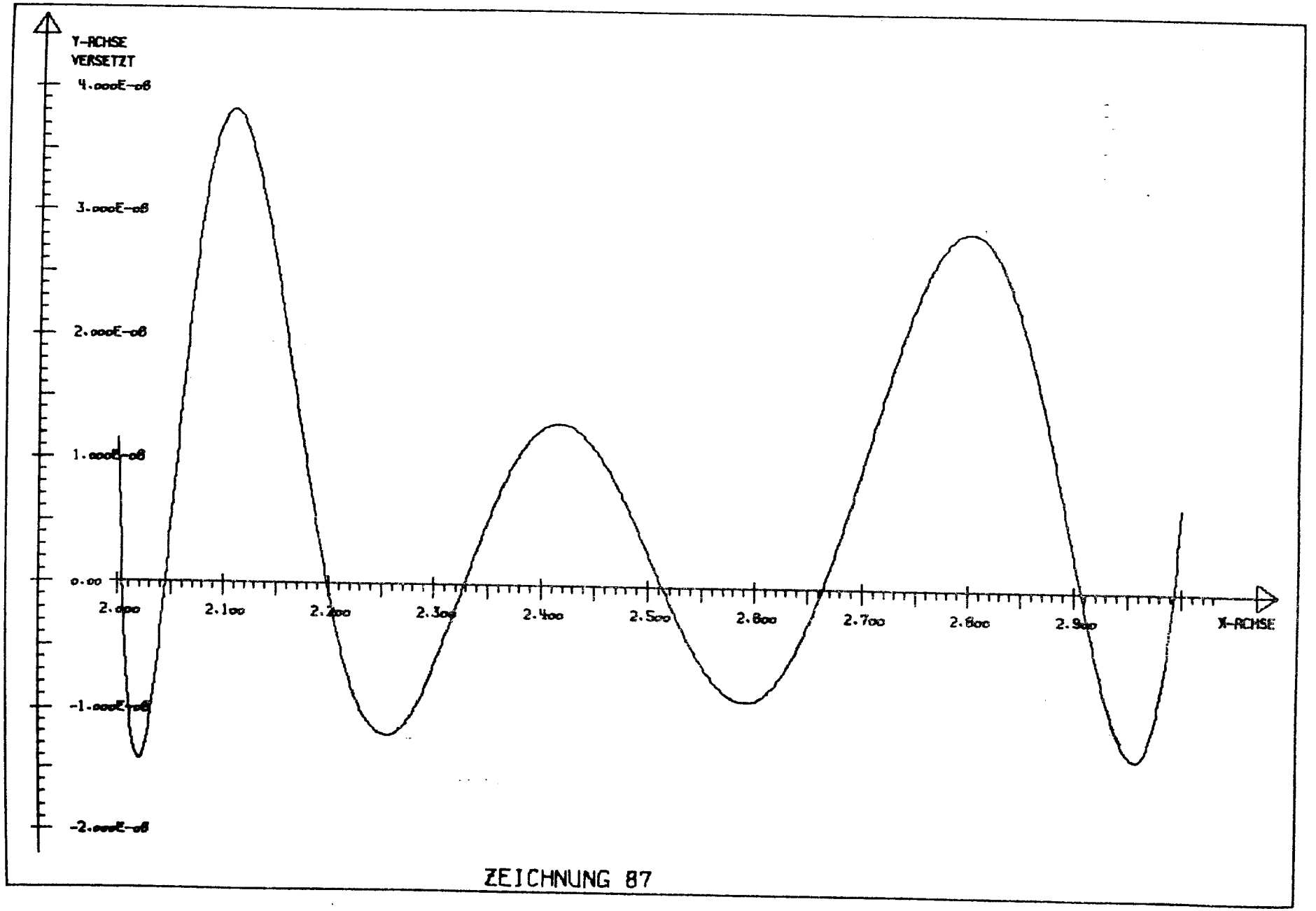
ZEICHNUNG 84



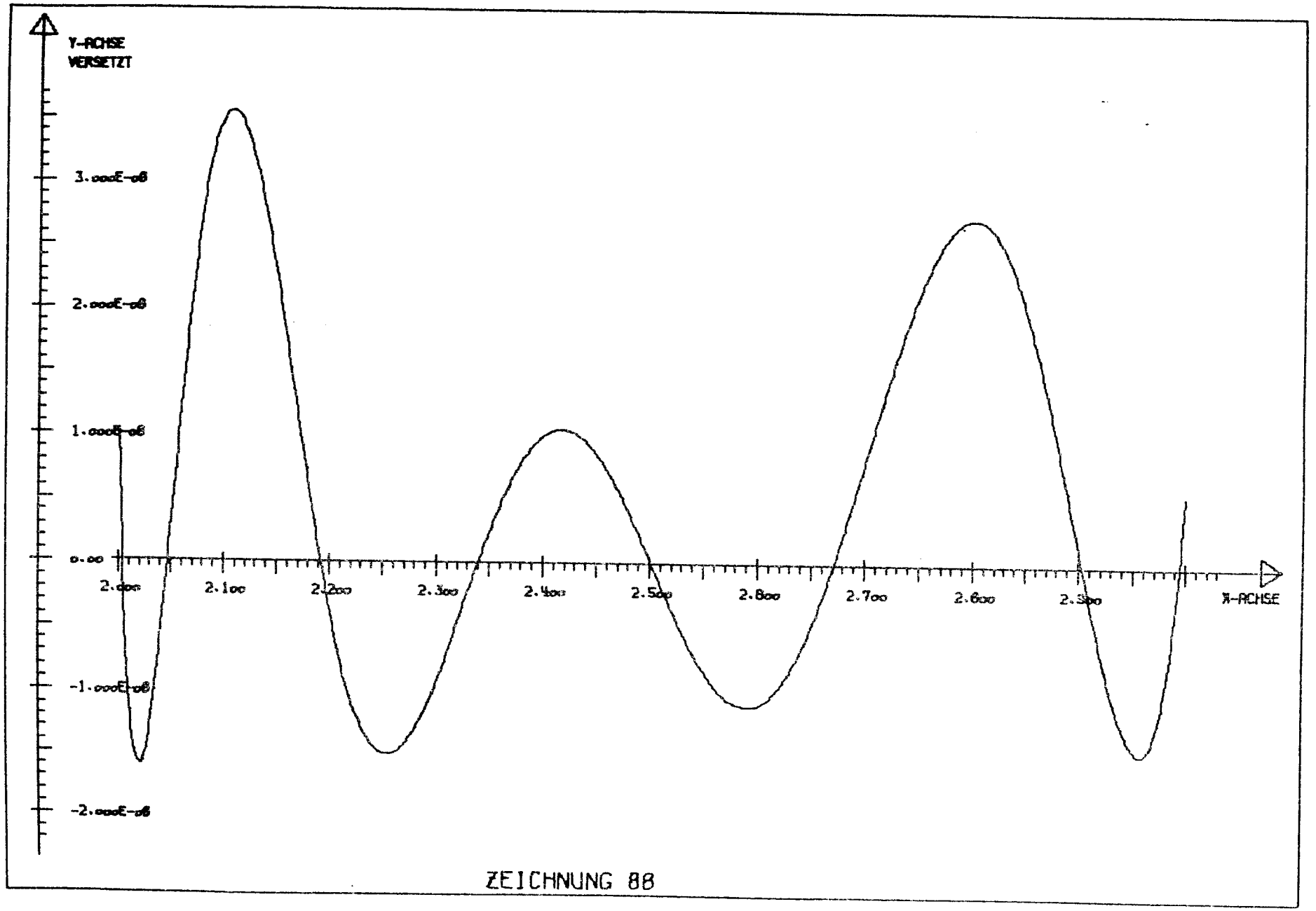
ZEICHNUNG 85



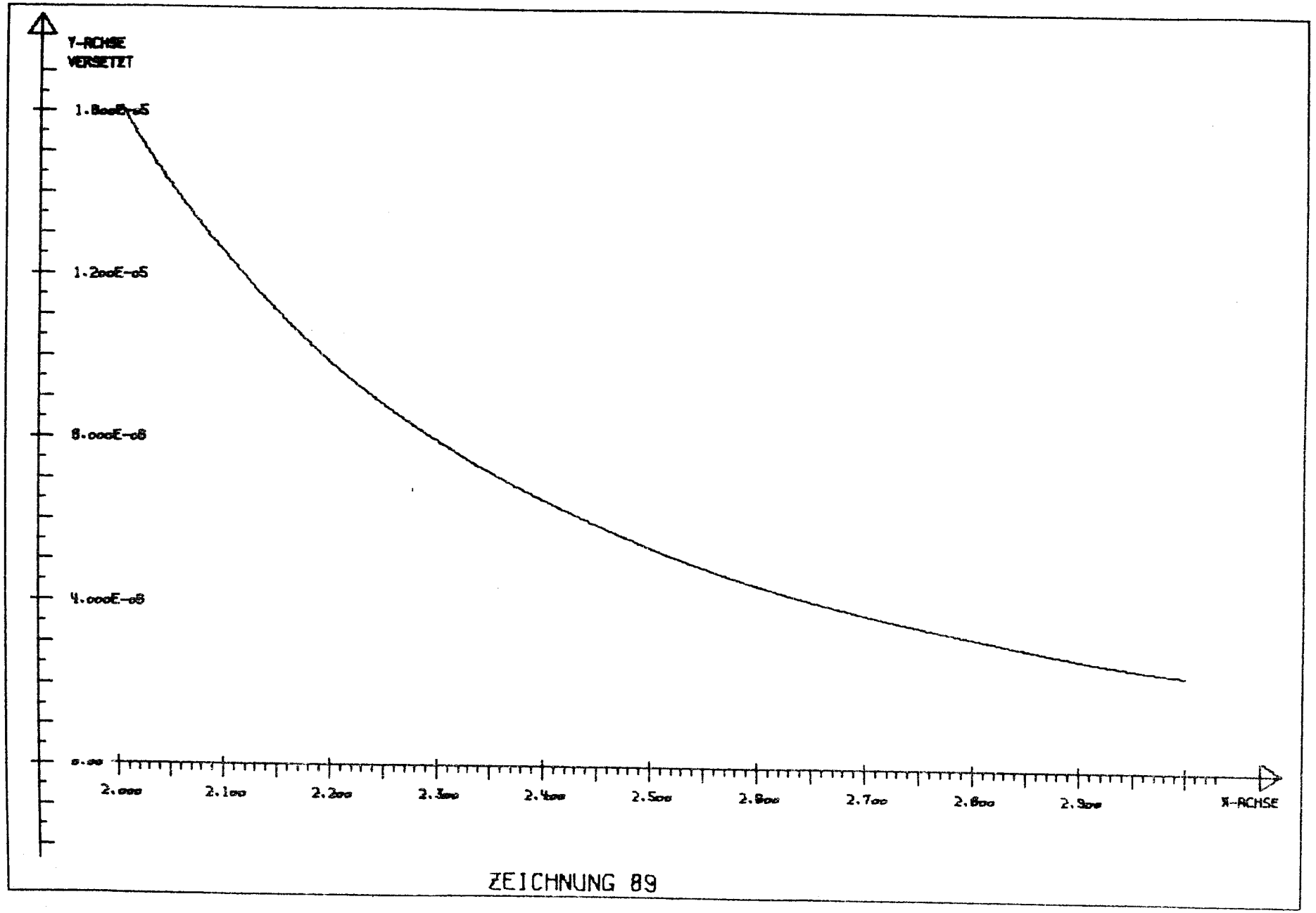
ZEICHNUNG 86



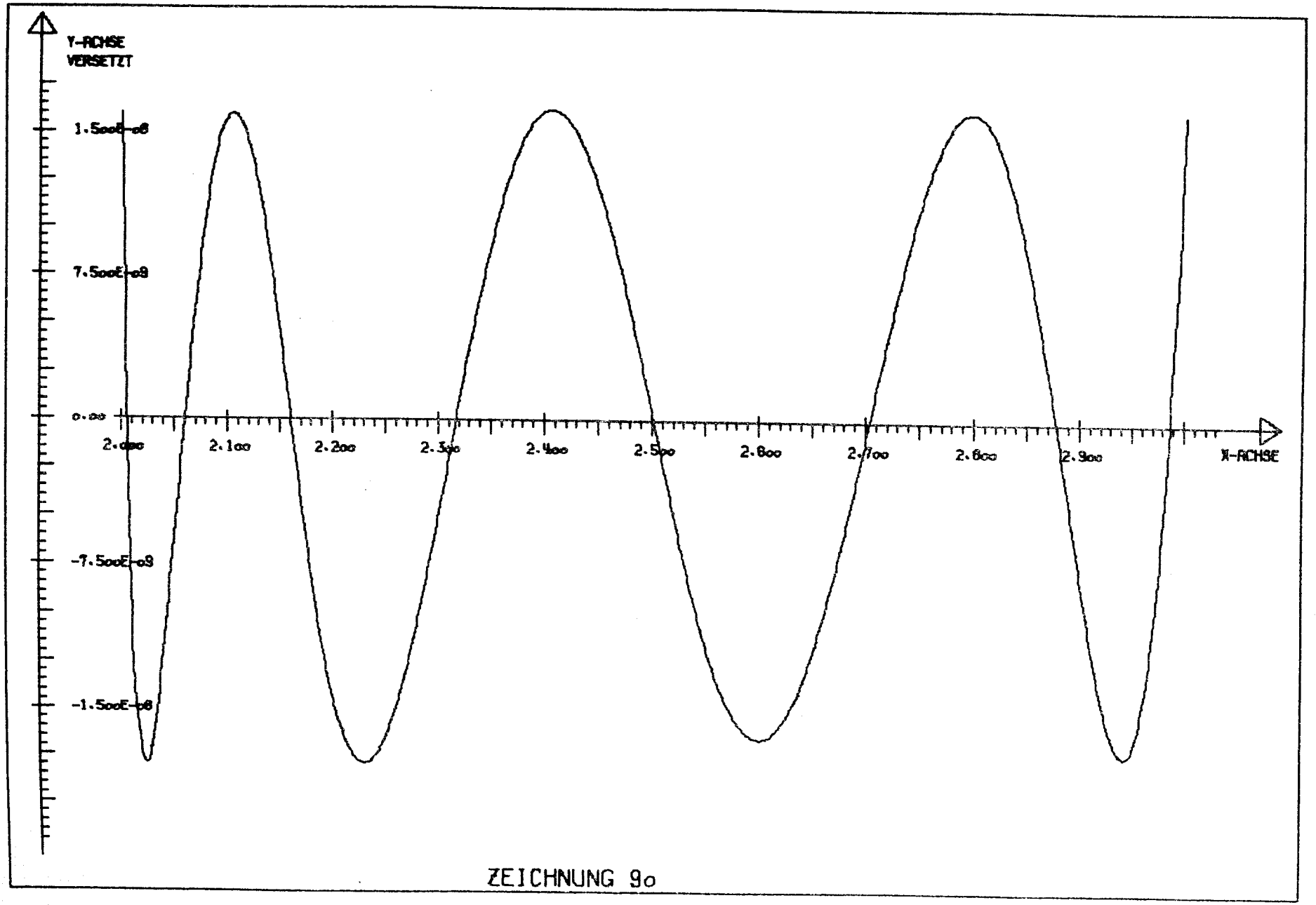
ZEICHNUNG 87



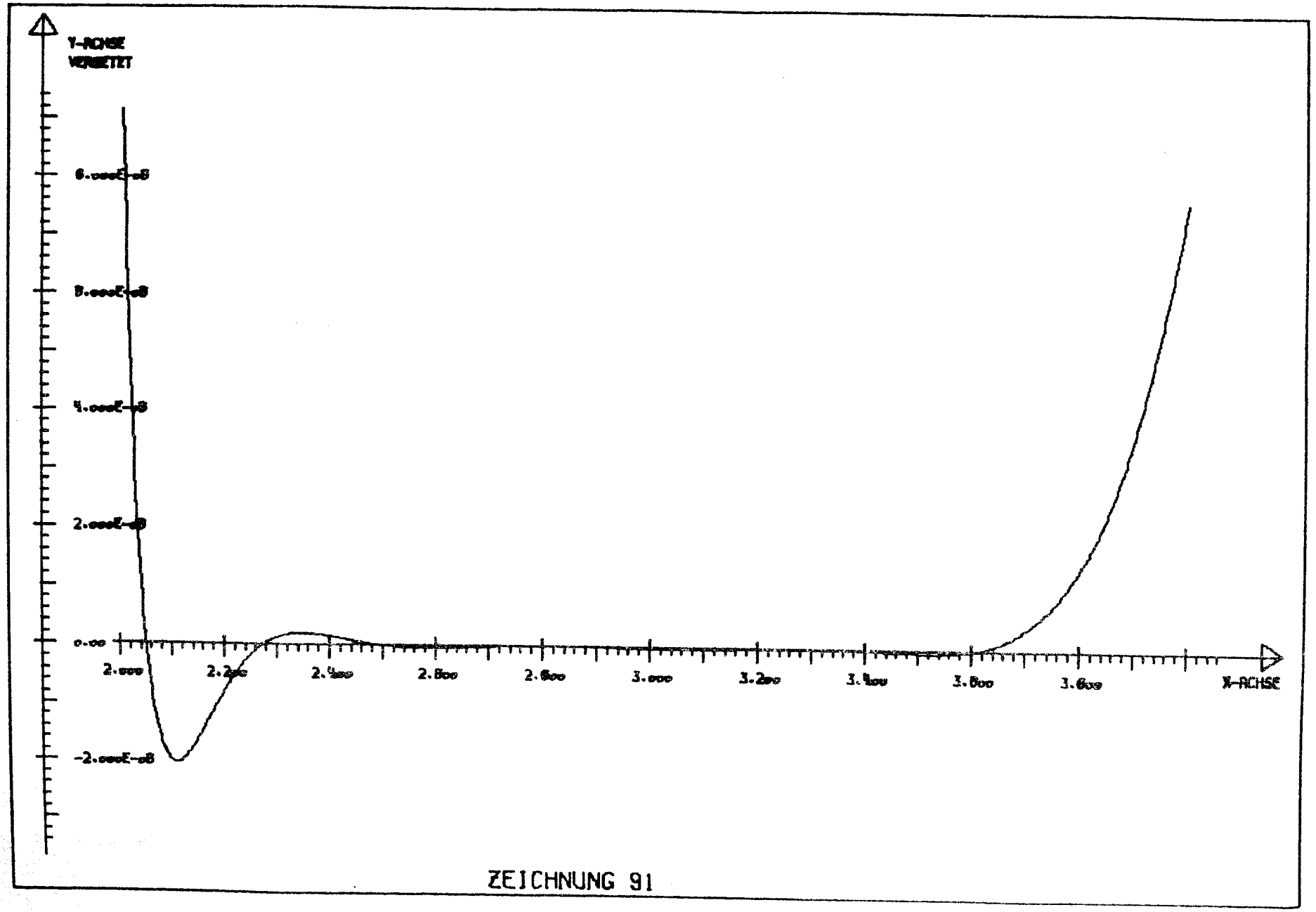
ZEICHNUNG 88



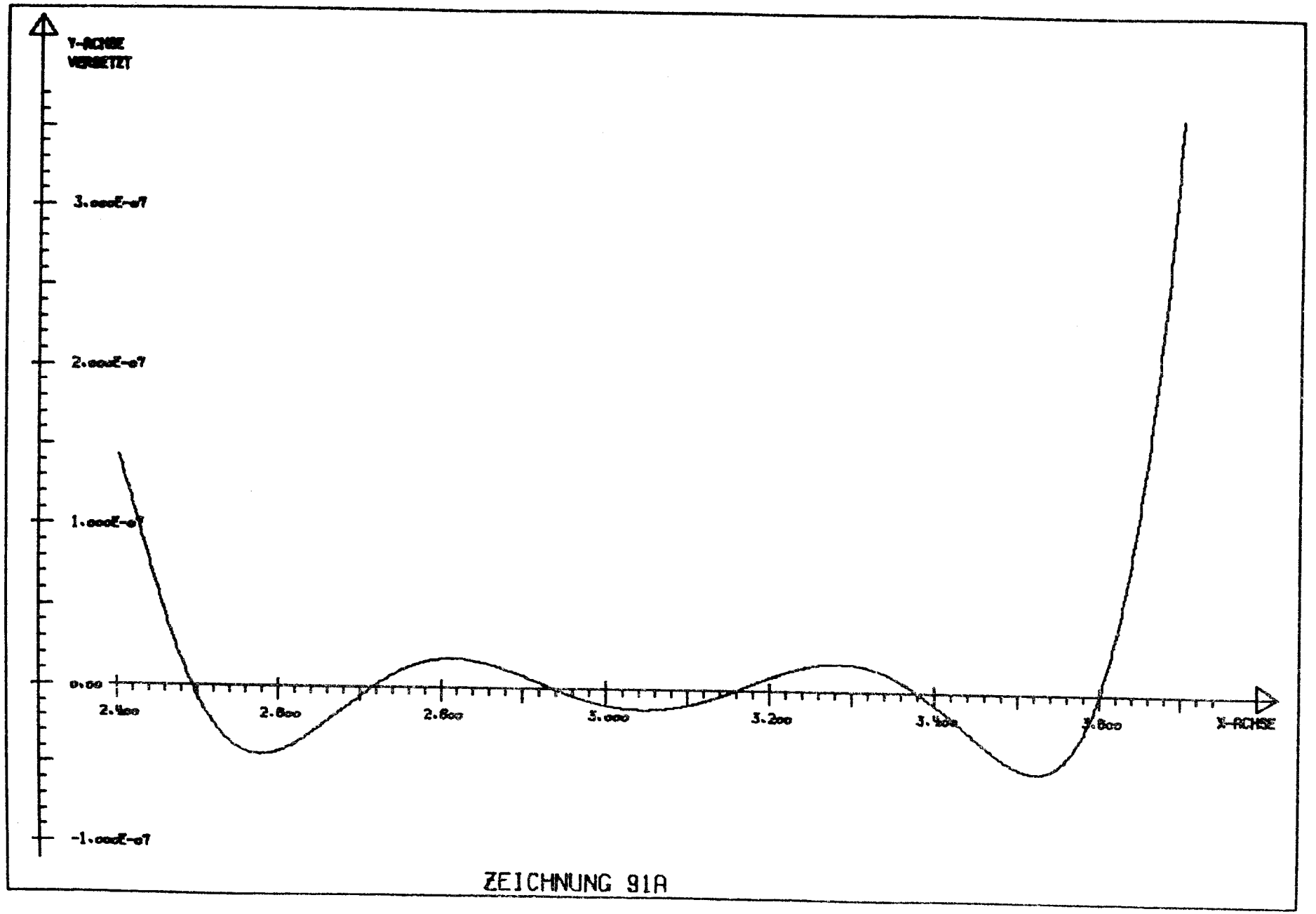
ZEICHNUNG 89



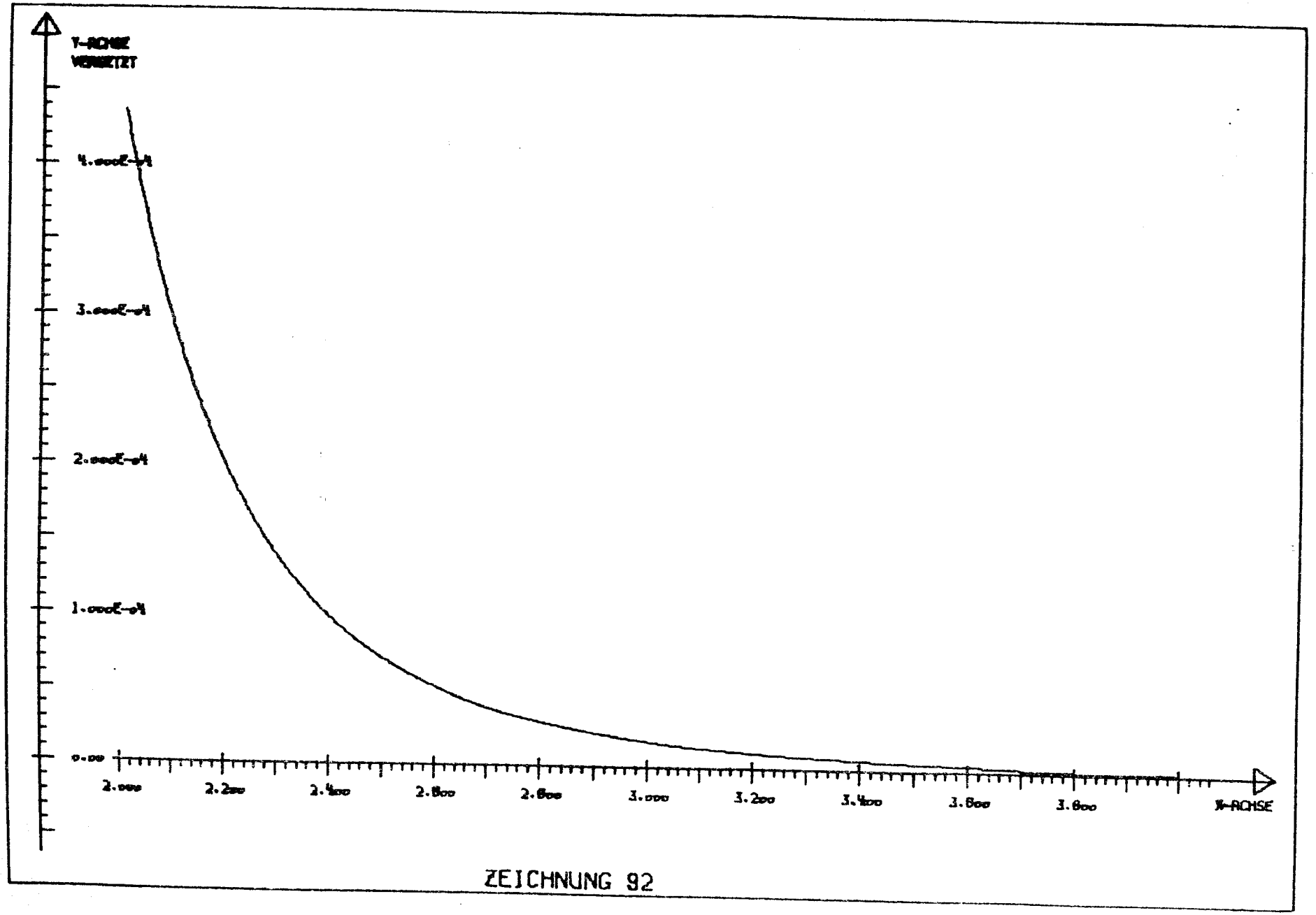
ZEICHNUNG 9o



ZEICHNUNG 91



ZEICHNUNG 91A



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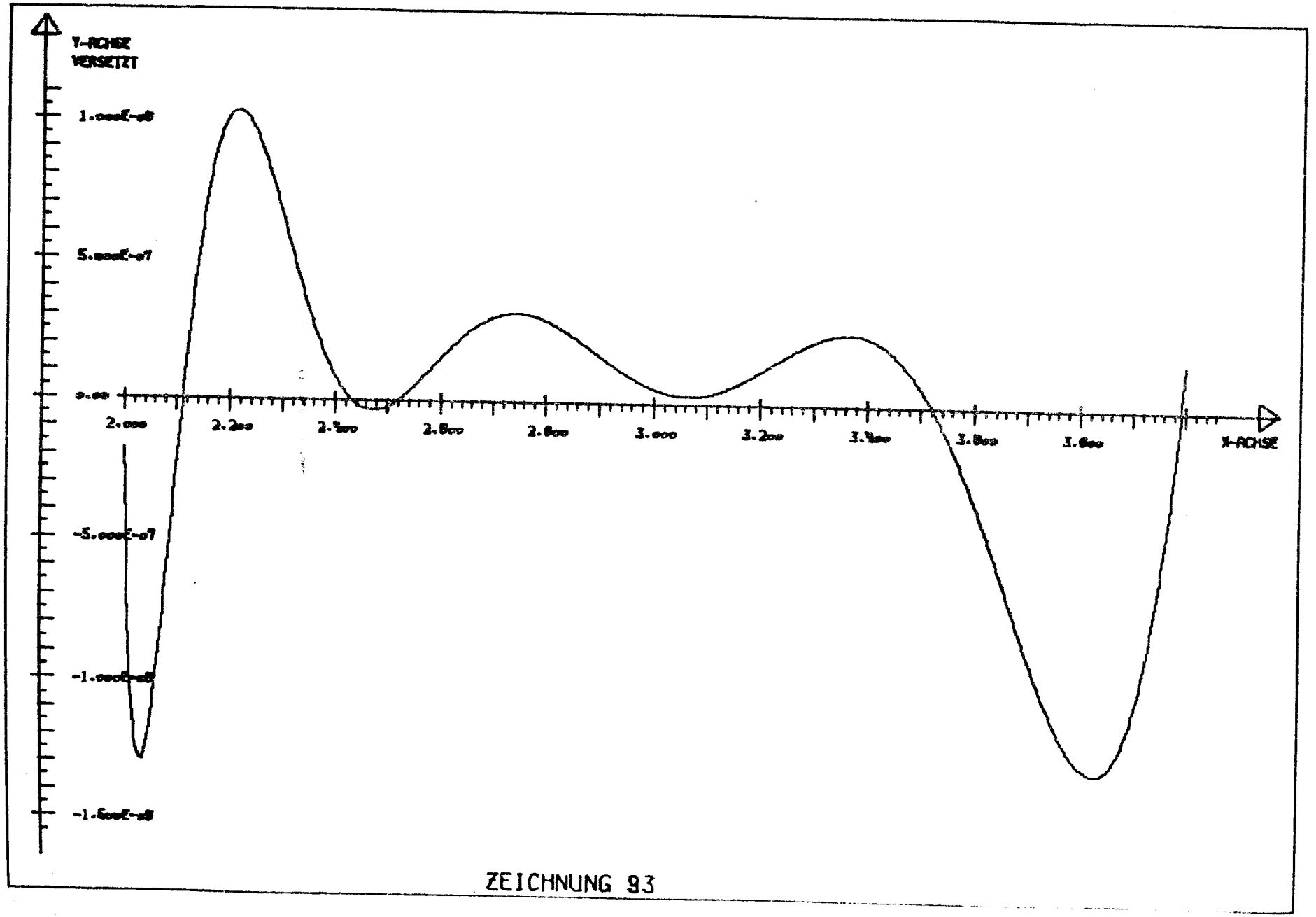
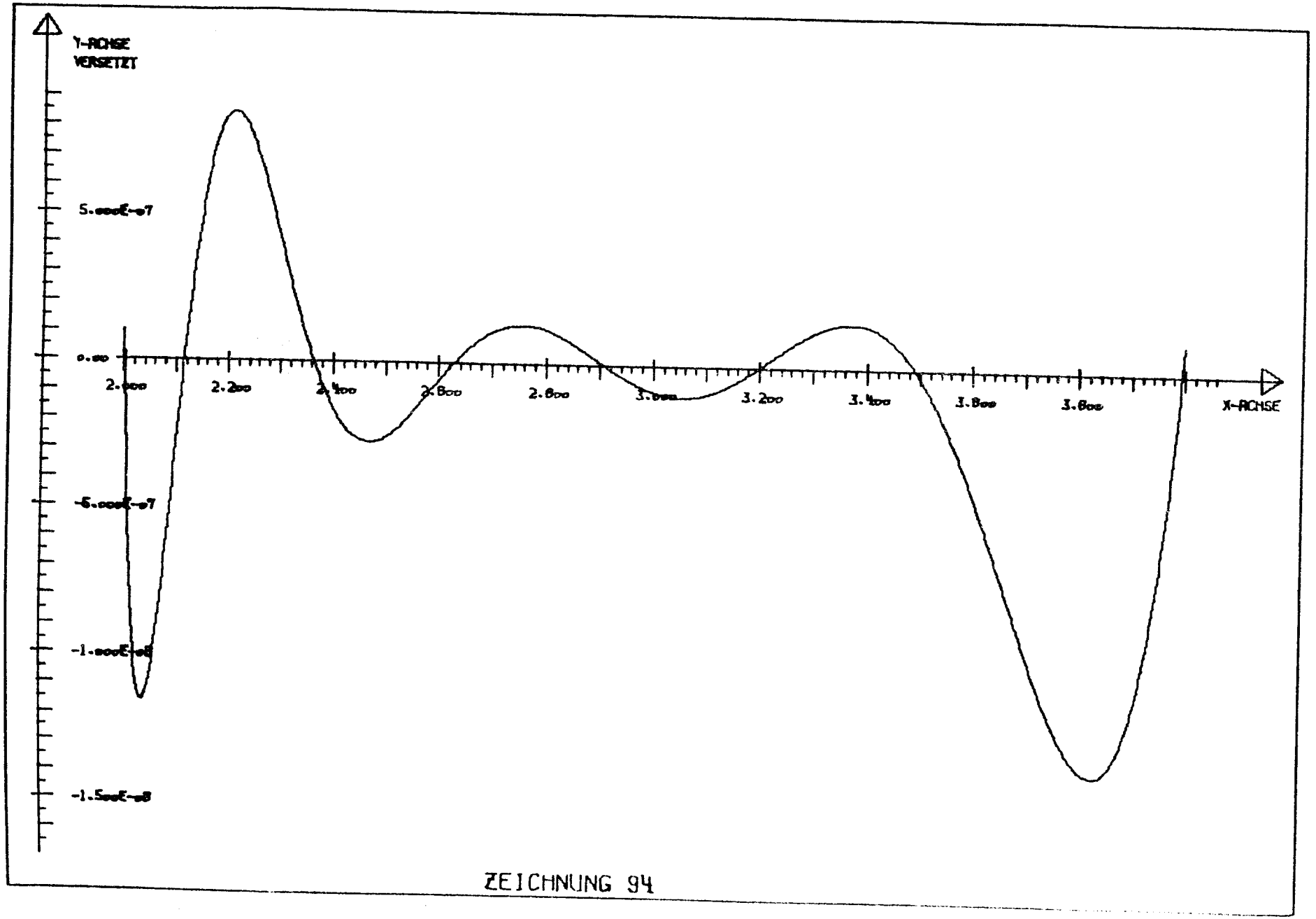
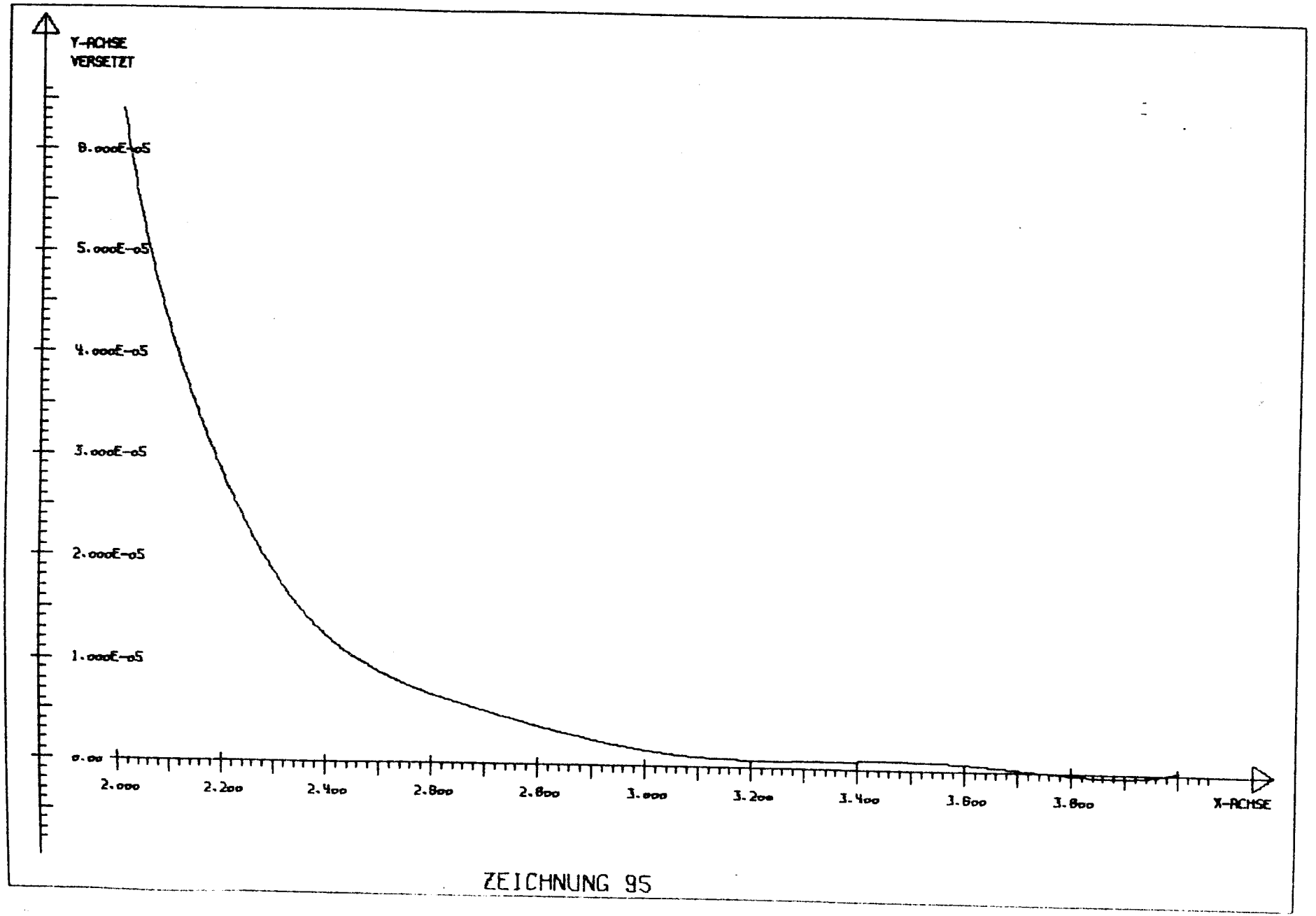


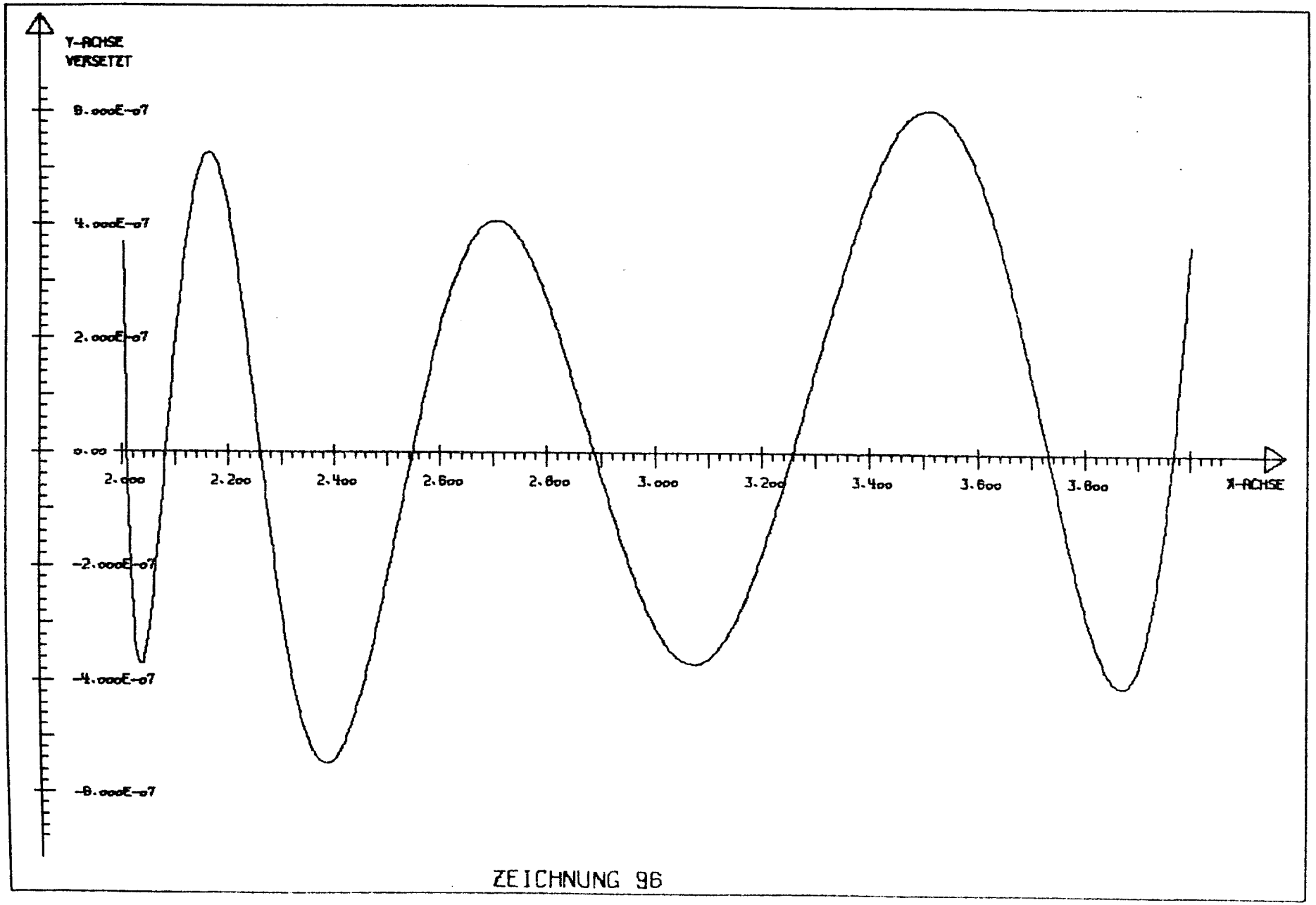
ZEICHNUNG 93



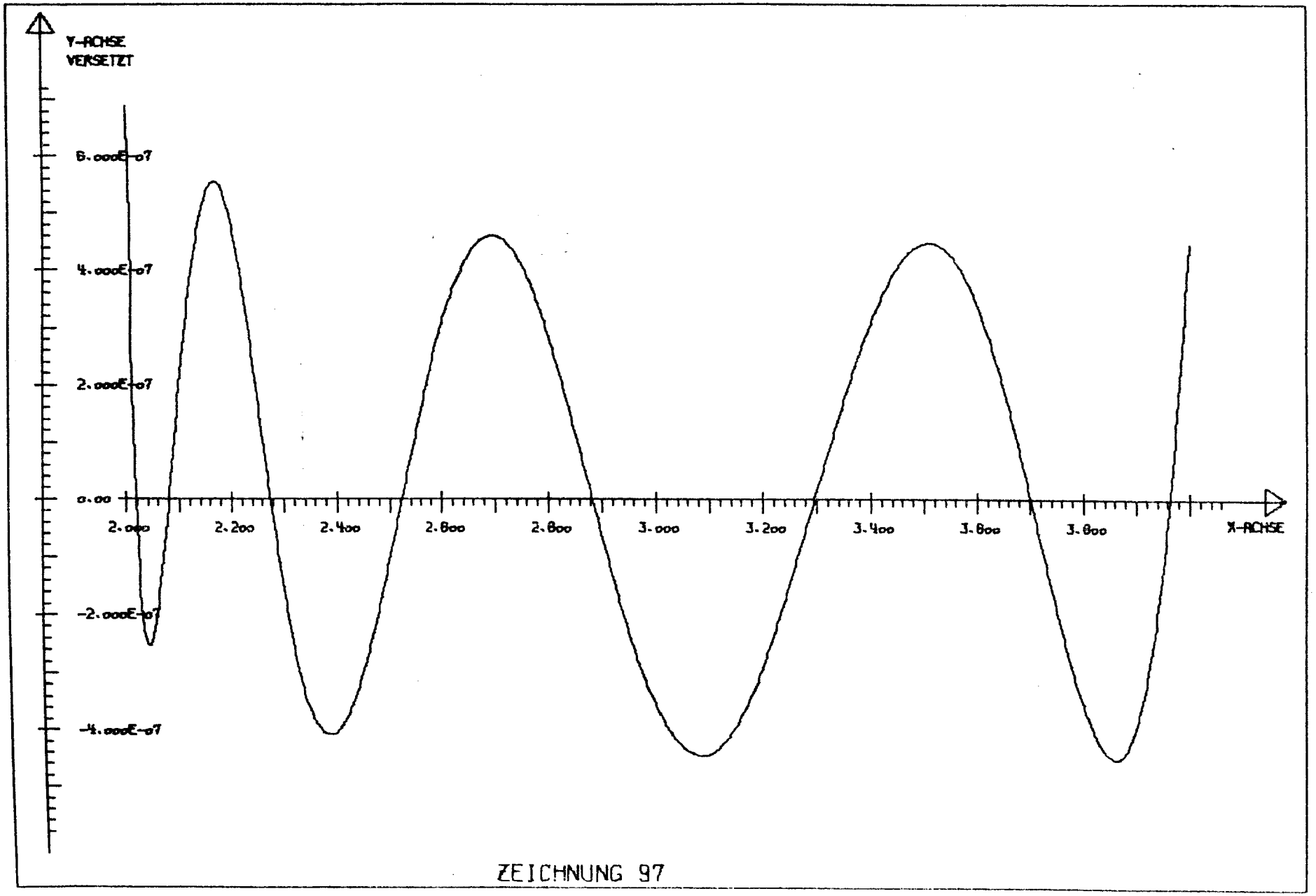
ZEICHNUNG 94



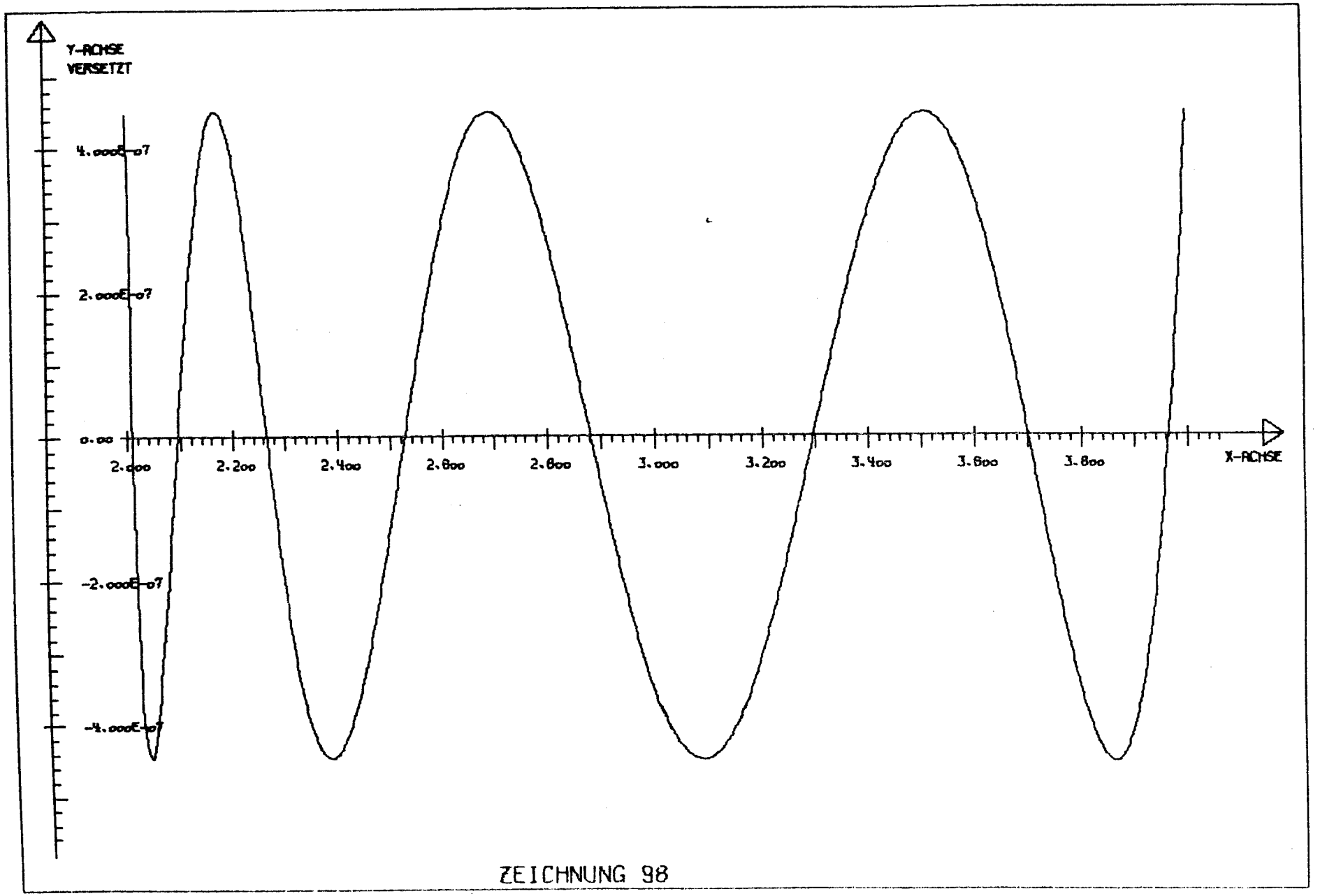
ZEICHNUNG 95



ZEICHNUNG 96



ZEICHNUNG 97



ZEICHNUNG 98