| Iteración | Condición Inicial | | | | | | | | | | | |
| | $\beta_i$ | | | $\gamma_i$ | | | $\alpha_i$ | | | $b_i$ | | |
| | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | -3 | 0.16326530612245 | 0.97571483363588 | -2 | -0.72727272727273 | 0.71392162455228 | -2.2 | -0.024168738607154 | 0.0090423720435804 | -2.25 | 0.18085106382979 | 0.065515195238621 |
| 1 | -2.0242851663641 | -0.166676253328831 | 0.52217349549069 | -2.7139216245523 | 0.55274120045235 | 0.45397936801744 | -2.2090423720436 | 0.01334243998964 | 0.0049391182900838 | -2.184484047614 | -0.088542855135622 | 0.03390731758124 |
| 2 | -2.5464586618548 | 0.80222617732085 | 2.5196589724163 | -3.1679009925697 | 0.45940160249182 | 0.23628688607527 | -2.2041032537535 | -0.0071393590015309 | 0.0026575273339344 | -2.2183921223426 | 0.052021701412609 | 0.019089877816773 |
| 3 | -0.02679969438518 | -0.38918886015487 | 1.0585152348081 | -2.9316141064945 | 0.16824248032134 | 0.29521666372275 | -2.2067607810874 | 0.0038839526185 | 0.0014413487082718 | -2.1993022445258 | -0.02706530304078 | 0.010135269932103 |
| 4 | -1.08531492424466 | 0.33506182478278 | 0.3796447477665 | -3.2268307702172 | 0.63458082672942 | 0.27861178621412 | -2.2053194323792 | -0.0020939348783613 | 0.00077833023348139 | -2.2094375144579 | 0.014979903590862 | 0.0055429734943662 |
| 5 | -0.70567017648012 | -0.13563207958057 | 0.13907714138005 | -2.9482189840031 | 0.16005910623524 | 0.39602884670568 | -2.2060977626126 | 0.0011343932774652 | 0.00042128679205922 | -2.2038945409636 | -0.0080053341668537 | 0.00299806137565438 |
| 6 | -0.8447473186017 | 0.040297992664817 | 0.033668018695453 | -3.3442478307088 | 0.98098696694456 | 0.4501002436761 | -2.2056764758206 | -0.00061293736764833 | 0.00022777396544687 | -2.2068751547201 | 0.0016171458432996 | 0.0016171458432996 |
| 7 | -0.81106713090564 | -0.00569748201670015 | 0.0049099498575538 | -2.8941475570327 | 0.20186054047316 | 0.2247377023818 | -2.205904215476 | 0.00033165639570948 | 0.00012319640937752 | -2.2052258008768 | -0.0023487273341605 | 0.00083710028327803 |
| 8 | -0.815977080760319 | 0.00091461784870433 | 0.00078406855342372 | -3.1188852594145 | 0.33387621530144 | 0.22099153583015 | -2.2057810190667 | -0.00017931851384638 | 6.6618645385594e-05 | -2.2061311091601 | 0.0012726946242791 | 0.00047263078130699 |
| 9 | -0.81519301220977 | -0.00014370454199824 | 0.00012329338040523 | -2.8978937235844 | 0.19760019758211 | 0.22749805918447 | -2.205847637712 | 9.69936390026e-05 | 3.6031381716928e-05 | -2.2056584783788 | -0.00068758716438348 | 0.00025548138928624 |
| 10 | -0.81531630601418 | 2.2654992124739e-05 | 1.9434726725165e-05 | -3.1253917827688 | 0.34919187870047 | 0.23164707356429 | -2.2058116063303 | -5.2452146020817e-05 | 1.94858236992822e-05 | -2.2059139597671 | 0.00013820745079629 | 0.00013820745079629 |
| 11 | -0.81529687218745 | -3.5696584452537e-06 | 3.0623163000953e-06 | -2.9037447092045 | 0.191330694309 | 0.23310364647374 | -2.205831092154 | 2.8368496838658e-05 | 1.0538582041163e-05 | -2.2057775523163 | -7.473470083216e-05 | 7.47347008321e-05 |
| 12 | -0.81529993360375 | 5.6250418210625e-07 | 4.8256024472566e-07 | -3.1368483636783 | 0.37687400523349 | 0.22397599481983 | -2.2058205553572 | -1.534119454653e-05 | 5.693844954653e-06 | -2.2058504870171 | 4.0421382021094e-05 | 4.0421382021094e-05 |
| 13 | -0.81529945104773 | -8.863783105966e-08 | 7.6039863183838e-08 | -2.9128723688585 | 0.18251095011072 | 0.24573646553987 | -2.2058262530065 | 8.297372308756e-06 | 3.0823981796622e-06 | -2.2058100656351 | -5.88424402671e-05 | 2.185984054659e-05 |
| 14 | -0.81529952708759 | 1.3967329811352e-08 | 1.1952172254399e-08 | -3.1586088343984 | 0.43358610295064 | 0.23181923200922 | -2.2058231706077 | -4.4873719670809e-06 | 1.6670239872951e-06 | -2.2058319254756 | 3.1824826983966e-05 | 1.182559104591e-05 |
| 15 | -0.81529951510542 | -2.2009365713632e-09 | 1.8881204377763e-09 | -2.9267896023892 | 0.1713984856173 | 0.27830872494957 | -2.2058248376317 | 2.4268788813247e-06 | 9.0156502441374e-07 | -2.2058201029165 | -1.721122304065e-06 | 6.393821236017e-06 |
| 16 | -0.81529951699354 | 3.4681800436844e-10 | 2.9752522667792e-10 | -3.2050983248842 | 0.56781721404913 | 0.2603265542937 | -2.2058239360666 | -1.3125075411131e-06 | 4.875558303422e-07 | -2.2058264967378 | 9.308286404929e-06 | 3.457943336115e-06 |
| 17 | -0.81529951669601 | -5.4650667696885e-11 | 4.6883275039988e-11 | -2.9447717705905 | 0.16141030592037 | 0.36703301396955 | -2.2058244236525 | 7.098336504149e-07 | 2.636973352301e-07 | -2.2058230387944 | -5.0340888372948e-06 | 1.870125358127e-06 |
| 18 | -0.81529951674429 | 8.6118097814453e-12 | 7.3878680950656e-12 | -3.3118047845601 | 0.89663857968154 | 0.38621204498407 | -2.2058241599551 | -3.8389351030681e-07 | 1.4261330960608e-07 | -2.2058249089198 | 2.7225577543315e-06 | 1.011407148698e-06 |
| 19 | -0.81529951673551 | -1.3571672267219e-12 | 1.1642908589244e-12 | -2.925592739576 | 0.17224057948187 | 0.27465463932124 | -2.2058243025684 | 2.0761816286327e-07 | 7.7128442743576e-08 | -2.2058238975126 | -1.4724161546732e-06 | 5.469907624622e-07 |
| 20 | -0.81529951673667 | 2.1391193116543e-13 | 1.8351986597054e-13 | -3.2002473788973 | 0.55317659768086 | 0.25670591768086 | -2.2058242242544 | -1.122844749032e-07 | 4.1712763909629e-08 | -2.2058244445034 | 7.9631617064669e-07 | 2.958248936936e-07 |
| 21 | -0.81529951673649 | -3.3685960734972e-14 | 8.1529951673649e-14 | -2.9435414612164 | 0.16192124173181 | 0.35830433924610 | -2.2058242445936 | 6.072593223091e-08 | 2.255918607474e-08 | -2.2058241446785 | -4.3066511177008e-07 | 1.599858606584e-07 |
| 22 | | | | -3.3018458004703 | 0.867084106982 | 0.36979609609668 | -2.2058242528781 | -3.2841925929321e-08 | 1.220050638953e-08 | -2.2058243086671 | 2.3291329798473e-07 | 8.652537770542e-08 |
| 23 | | | | -2.9320487343736 | 0.16795636678331 | 0.29693160277174 | -2.2058242523169 | 1.7761640218958e-08 | 6.5983063681256e-09 | -2.2058242221417 | -1.2596463888263e-07 | 4.679483341579e-08 |
| 24 | | | | -3.2289803371454 | 0.64126350945839 | 0.28059018172730 | -2.2058242525209 | -9.6058875674687e-09 | 3.5685085997272e-09 | -2.2058242689366 | 6.8124470442178e-08 | 2.530768217212e-08 |
| 25 | | | | -2.9483901554181 | 0.1599755833741 | 0.39761055922781 | -2.2058242525068 | 5.1950766689704e-09 | 1.9299282172369e-09 | -2.2058242436289 | -3.6843218208143e-08 | 1.368637925586e-08 |
| 26 | | | | -3.346000714646 | 0.992776495193 | 0.45495816280540 | -2.2058242525144 | -2.809610737201e-09 | 1.043743108027e-09 | -2.2058242573158 | 1.9925627771767e-08 | 7.402207291562e-09 |
| 27 | | | | -2.8910425518593 | 0.20450224458605 | 0.22422079571843 | -2.2058242525103 | 1.5194985848901e-09 | 5.644813505512e-10 | -2.2058242499136 | -1.0776219034432e-08 | 4.003277265241e-09 |
| 28 | | | | -3.1152633475778 | 0.32566827144848 | 0.22086319382295 | -2.2058242525125 | -8.2177894610314e-10 | 3.052842330120e-10 | -2.2058242539169 | 5.8280173199324e-09 | 2.165060575265e-09 |
| 29 | | | | -2.8944001537548 | 0.20156734339703 | 0.22490532040858 | -2.2058242525113 | 4.4443713236676e-10 | 1.651048187569e-10 | -2.2058242517518 | -3.1519191235324e-09 | 1.170912256043e-09 |
| 30 | | | | -3.1193054741634 | 0.33483889459572 | 0.22101778679786 | -2.2058242525120 | -2.4036135861112e-10 | 8.929229246132e-11 | -2.2058242529227 | 1.7046280577896e-09 | 6.332552260346e-10 |
| 31 | | | | -2.8982876873655 | 0.19716324105586 | 0.22782382813510 | -2.2058242525117 | 1.2999198156202e-10 | 4.829114885516e-11 | -2.2058242522895 | -9.218999826473e-10 | 3.424784900119e-10 |
| 32 | | | | -3.126111515501 | 0.35072557189639 | 0.22175102429225 | -2.2058242525119 | -7.0304207345086e-11 | 2.611730520492e-11 | -2.2058242526322 | 4.985454902347e-10 | 1.845220283550e-10 |
| 33 | | | | -2.9043604912088 | 0.19069853545895 | 0.23379583445960 | -2.2058242525118 | 3.8022228826815e-11 | 1.412514549701e-11 | -2.2058242524468 | -2.696467592597e-10 | 1.001742670900e-10 |
| 34 | | | | -3.138156325684 | 0.3801465140816 | 0.22477307521910 | -2.2058242525118 | -2.0564018715395e-11 | 7.639222587812e-12 | -2.2058242525469 | 1.458306564490e-10 | 5.417488679881e-11 |
| 35 | | | | -2.9133832504493 | 0.18165637947944 | 0.24783540010850 | -2.2058242525118 | 1.1212056202910e-11 | 4.131361919251e-12 | -2.2058242524927 | -7.886849822632e-11 | 2.929878622632e-11 |
| 36 | | | | -3.1612186505578 | 0.44069140611182 | 0.23302100750039 | -2.2058242525118 | -6.0152578984607e-12 | 2.234656903965e-12 | -2.2058242525222 | 4.265257311129e-11 | 1.584510300745e-11 |
| 37 | | | | -2.9281976430574 | 0.17043559429968 | 0.28286649467676 | -2.2058242525118 | 3.2539109698924e-12 | 1.208108292119e-12 | -2.2058242525062 | -2.306752416776e-11 | 8.569589482476e-12 |
| 38 | | | | -3.2110641377342 | 0.58597112480418 | 0.26498804934640 | -2.2058242525118 | -1.7600658946605e-12 | 6.536993168929e-13 | -2.2058242525148 | 1.247643819309e-11 | 4.634959083205e-12 |
| 39 | | | | -2.9460760883878 | 0.16098612676822 | 0.38388278810820 | -2.2058242525118 | 9.5120686535108e-13 | 3.534950104065e-13 | -2.2058242525101 | -6.748097082205e-12 | 2.506886538903e-12 |
| 40 | | | | -3.329958876496 | 0.92899104077699 | 0.41322538548720 | -2.2058242525118 | -5.1497626067788e-13 | 1.914024944538e-13 | -2.2058242525126 | 3.649254439264e-12 | 1.355804357672e-12 |
| 41 | | | | -2.9167334910088 | 0.17914103881414 | 0.25287017448650 | -2.2058242525118 | 2.7894126803616e-13 | 1.034727858906e-13 | -2.2058242525113 | -1.973486756270e-12 | 7.331912854624e-13 |
| 42 | | | | -3.1696036654975 | 0.46391637389894 | 0.23722457190512 | -2.2058242525118 | -1.5012148591019e-13 | 5.595240441108e-14 | -2.2058242525117 | 1.067205263991e-12 | 3.965716643961e-13 |
| 43 | | | | -2.9323790935924 | 0.16775427263676 | 0.29825851836734 | -2.2058242525118 | 8.2077180931386e-14 | 2.2058242525118 | -2.2058242525116 | -5.779727685514e-13 | 2.144958537558e-13 |
| 44 | | | | -3.2306376119597 | 0.64642269186264 | 0.28213735126225 | | | | -2.2058242525116 | 3.121557729887e-13 | 1.159072837708e-13 |
| 45 | | | | -2.9485002606975 | 0.15995821484566 | 0.39863649953920 | | | | -2.2058242525117 | -1.685964233154e-13 | 6.261657858885e-14 |
| 46 | | | | -3.3471367606514 | 0.99580027904069 | 0.45672107671518 | | | | -2.2058242525118 | 9.146608354715e-14 | 2.2058242525118 |
| 47 | | | | -2.8904156839362 | 0.20629211661056 | 0.2254995504909 | | | | | | |
| $\cdots$ | | | | $\cdots$ | $\cdots$ | $\cdots$ | | | | | | $\cdots$ |
| 95 | | | | -2.92924036992158 | 0.16974194880682 | 0.2864336456179 | | | | | | |
| 96 | | | | -3.2156740148776 | 0.60009805657412 | 0.2688482632391 | | | | | | |
| 97 | | | | -2.9468257778537 | 0.16057741823464 | 0.3837279680008 | | | | | | |
| 98 | | | | -3.3305537474545 | 0.95050333946367 | 0.42095512953249 | | | | | | |
| 99 | | | | -2.9095986617922 | 0.18553755266829 | 0.090401382078011 | | | | | | |

Figure 1: Método de Newton, raíz 1

**Condición Inicial**

| | $\beta_i$ | | | $\gamma_i$ | | | $\alpha_i$ | | | $b_k$ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Iteración | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ |
| 0 | -2 | -0.727272727273 | 0.7132916245228 | -1 | 0.25 | 0.22099687473515 | -1.6 | 1.33714296616690e+14 | | -1.65 | -0.1769608243197 | 0.00589751175313963 |
| 1 | -2.713291624523 | 0.55274120045235 | 0.4548948601744 | -0.77900312526485 | -0.04786049517067 | 0.042955240382728 | -1.6 | 1.33714296616690e+14 | | -1.6559575117532 | -0.235187151054918 | 0.0099353238784918 |
| 2 | -3.167900925697 | 0.45940160249182 | 0.23637598607527 | -0.82195836564758 | 0.0090171965639797 | 0.0076835774562825 | -1.6 | 1.33714296616690e+14 | | -1.6658328356317 | -0.3161679086767 | 0.01909978098072 |
| 3 | -2.9316141064945 | 0.16822480803213 | 0.29521666372275 | -0.81427478819129 | -0.0013819449337619 | 0.00011886137702213 | -1.6 | 1.33714296616690e+14 | | -1.6849326161298 | -0.4353069770249 | 0.04758758007906 |
| 4 | -3.2268307702172 | 0.634568082672942 | 0.2786117862412 | -0.81546160196151 | 0.0002187308432859 | 2.954847550066244e-05 | -1.6 | 1.33714296616690e+14 | | -1.7325201962097 | -0.63379259300086 | 0.2474002323978 |
| 5 | -2.9482189840031 | 0.16005910623524 | 0.39602884670568 | -0.81527399093 | -3.44430231960028e-05 | 4.6565414035977e-06 | -1.6 | 1.33714296616690e+14 | | -1.9799204286075 | -0.7697185264923 | 0.94921719710611 |
| 6 | -3.3442478307088 | 0.980808696694456 | 0.4501002436761 | -0.81530353940551 | 5.42804140359772e-06 | 7.33754969618534e-07 | -1.6 | 1.33714296616690e+14 | | -2.9291376257136 | 0.16980956044277 | 0.28607461317107 |
| 7 | -2.8941475870327 | 0.20186054047316 | 0.22437676238185 | -0.81529888286384 | -8.55322225696661e-07 | 1.15623798757762e-07 | -1.6 | 1.33714296616690e+14 | | -3.2152122388847 | 0.5986793795423 | 0.26846209235314 |
| 8 | -3.1188852594145 | 0.3338762530144 | 0.22099153583015 | -0.8152996166208 | 1.34779591718121e-07 | 1.82197007481112e-08 | -1.6 | 1.33714296616690e+14 | | -2.9467501465315 | 0.1600604393744 | 0.38308874938313 |
| 9 | -2.8978937235844 | 0.19760019758211 | 0.22748005918447 | -0.81529950099701 | -2.1238265981698e-08 | 2.87011464842425e-09 | -1.6 | 1.33714296616690e+14 | | -3.298383214696 | 0.9484961619563 | 0.4195266153577 |
| 10 | -3.1253917827688 | 0.34901967870047 | 0.22164077356429 | -0.81529951921671 | 3.34667260079066e-09 | 4.5240703381746e-10 | -1.6 | 1.33714296616690e+14 | | -2.9131171061239 | 0.18486514299987 | 0.2416409442934 |
| 11 | -2.9037447092045 | 0.1913360694309 | 0.23310365467374 | -0.81529951634569 | -5.27360282064658e-10 | 7.1289196768021e-11 | -1.6 | 1.33714296616690e+14 | | -3.1519526005532 | 0.41574552889009 | 0.22899447031549 |
| 12 | -3.136848638783 | 0.37687400523349 | 0.22397599501973 | -0.8152995167981 | 8.3100103278507e-11 | 1.123356363065e-11 | -1.6 | 1.33714296616690e+14 | | -2.9229581302377 | 0.17417032815168 | 0.2672652327206 |
| 13 | -2.912872368585 | 0.18251095011072 | 0.24573646553987 | -0.81529951672681 | -1.3094717978302e-11 | 1.7701395904623e-12 | -1.6 | 1.33714296616690e+14 | | -3.1902233629583 | 0.52331455278035 | 0.2496474236008 |
| 14 | -3.1586088343984 | 0.43358610295064 | 0.23181892300922 | -0.81529951673804 | 2.063563024947e-12 | 2.7888802878584e-13 | -1.6 | 1.33714296616690e+14 | | -2.9405759405982 | 0.1632809596527 | 0.33892707784318 |
| 15 | -2.9267896023892 | 0.17139948563173 | 0.2783807229497 | -0.81529951673627 | -3.250634059409e-13 | 5.13190588505e-14 | -1.6 | 1.33714296616690e+14 | | -3.2950301814414 | 0.79901625065615 | 0.33723857303493 |
| 16 | -3.2050983248842 | 0.56781721404913 | 0.2603565429462 | -0.81529951673655 | 5.13190588505e-14 | | -1.6 | 1.33714296616690e+14 | | -2.9422644454065 | 0.1624890697463 | 0.3495869407075 |
| 17 | -2.944717705905 | 0.16141030592037 | 0.36706301396955 | | | 2.129442253854 | -1.6 | 1.33714296616690e+14 | | -3.2918513862772 | 0.83669852440946 | 0.3545531923623 |
| 18 | -3.3118047845601 | 0.89663857968154 | 0.38621204498407 | | | | -1.6 | 1.33714296616690e+14 | | -2.9372981939149 | 0.1649440690266 | 0.310568531263785 |
| 19 | -2.925592739576 | 0.17224057948187 | 0.27465463932124 | | | | -1.6 | 1.33714296616690e+14 | | -3.2579835065528 | 0.7320000721301 | 0.3105671187121 |
| 20 | -3.2002473788973 | 0.55317606036803 | 0.25670591768086 | | | | -1.6 | 1.33714296616690e+14 | | -2.9474163946816 | 0.16053919248052 | 0.3888211766715 |
| 21 | -2.9435414612164 | 0.1612124173181 | 0.35830361925392 | | | | -1.6 | 1.33714296616690e+14 | | -3.336237713531 | 0.9663000010463 | 0.432624645455214 |
| 22 | -3.3018450804703 | 0.867084106982 | 0.36979634609668 | | | | -1.6 | 1.33714296616690e+14 | | -2.9036129168009 | 0.1914668170848 | 0.23295820241042 |
| 23 | -2.9320487343736 | 0.16795636780331 | 0.29693160277174 | | | | -1.6 | 1.33714296616690e+14 | | -3.1365711192114 | 0.37618271192023 | 0.2390352735963 |
| 24 | -3.2289503371454 | 0.64126350945839 | 0.28059018172724 | | | | -1.6 | 1.33714296616690e+14 | | -2.9126675918517 | 0.18269573247403 | 0.245391910149 |
| 25 | -2.948301554181 | 0.15999755833741 | 0.39761055922781 | | | | -1.6 | 1.33714296616690e+14 | | -3.1580588828666 | 0.43209661292547 | 0.231572683838269 |
| 26 | -3.346000714646 | 0.9927776495193 | 0.45409642678662 | | | | -1.6 | 1.33714296616690e+14 | | -2.9264862444839 | 0.17160987358854 | 0.277363960260377 |
| 27 | -2.8919042518593 | 0.20450224458605 | 0.22335909571843 | | | | -1.6 | 1.33714296616690e+14 | | -3.2038502070877 | 0.56403929410095 | 0.25940264052823 |
| 28 | -3.1152633475778 | 0.32566827144848 | 0.22086319382295 | | | | -1.6 | 1.33714296616690e+14 | | -2.9444756655595 | 0.16153343178642 | 0.36486256844118 |
| 29 | -2.8944001537548 | 0.2015673439703 | 0.2249052040858 | | | | -1.6 | 1.33714296616690e+14 | | -3.3093101350007 | 0.8892908309117 | 0.3819781596498 |
| 30 | -3.11930544741634 | 0.33483888459572 | 0.22101778679786 | | | | -1.6 | 1.33714296616690e+14 | | -2.9273319690357 | 0.17102402465323 | 0.28003022233046 |
| 31 | -2.89826876873655 | 0.19716324105586 | 0.22782382813551 | | | | -1.6 | 1.33714296616690e+14 | | -3.2073621913661 | 0.57468792940245 | 0.26211269070262 |
| 32 | -3.1261115155101 | 0.35072557189639 | 0.22175102429225 | | | | -1.6 | 1.33714296616690e+14 | | -2.9452495006635 | 0.1612010483224 | 0.37094559135469 |
| 33 | -2.9043604192088 | 0.19069855345895 | 0.23379583447523 | | | | -1.6 | 1.33714296616690e+14 | | -3.3161950920182 | 0.90947365220277 | 0.39387250540128 |
| 34 | -3.1381562563684 | 0.38012465140816 | 0.2243280003473 | | | | -1.6 | 1.33714296616690e+14 | | -2.9232258566169 | 0.17465143356588 | 0.26560807992684 |
| 35 | -2.9138283250493 | 0.18165637947944 | 0.24739032550854 | | | | -1.6 | 1.33714296616690e+14 | | -3.1879306658798 | 0.51656697056994 | 0.24812529698654 |
| 36 | -3.1612186505578 | 0.4406914606182 | 0.23302100750039 | | | | -1.6 | 1.33714296616690e+14 | | -2.9398053688932 | 0.163656941017 | 0.3343632410205 |
| 37 | -2.9281976430574 | 0.17043559429968 | 0.2828664467676 | | | | -1.6 | 1.33714296616690e+14 | | -3.2741685829953 | 0.78249578091744 | 0.33023371257021 |
| 38 | -3.2110641377342 | 0.58597112480418 | 0.26506562889644 | | | | -1.6 | 1.33714296616690e+14 | | -2.9434845704251 | 0.1617512699046 | 0.36111169265847 |
| 39 | -2.946070688378 | 0.16089618838808 | 0.37695120765822 | | | | -1.6 | 1.33714296616690e+14 | | -3.3050465630835 | 0.8766645733014 | 0.374933356891 |
| 40 | -3.322958876496 | 0.92899102407699 | 0.40622583848714 | | | | -1.6 | 1.33714296616690e+14 | | -2.9301132061925 | 0.16917406581943 | 0.28955255216569 |
| 41 | -2.9167334910088 | 0.17914103881414 | 0.25287017448865 | | | | -1.6 | 1.33714296616690e+14 | | -3.2190657583582 | 0.61239209331239 | 0.2722453011333 |
| 42 | -3.1696036654975 | 0.46391637389894 | 0.2372457190512 | | | | -1.6 | 1.33714296616690e+14 | | -2.9471204572249 | 0.1605240113429 | 0.3885681627267 |
| 43 | -2.9323790935924 | 0.16770427263676 | 0.29825851836734 | | | | -1.6 | 1.33714296616690e+14 | | -3.3362772734976 | 0.96640938492409 | 0.43270822584222 |
| 44 | -3.2306376119597 | 0.64642269186264 | 0.28213735126225 | | | | -1.6 | 1.33714296616690e+14 | | -2.9035690476554 | 0.19151200113091 | 0.23290994997879 |
| 45 | -2.9485020600975 | 0.15995821484566 | 0.39863649995392 | | | | -1.6 | 1.33714296616690e+14 | | -3.1364790426342 | 0.37595330853764 | 0.2238796272257 |
| 46 | -3.3471367606514 | 0.99580027904069 | 0.45672107671518 | | | | -1.6 | 1.33714296616690e+14 | | -2.9125994154085 | 0.18275573868245 | 0.24527770313081 |
| 47 | -2.8904156393362 | 0.20621921661056 | 0.22254499504909 | | | | -1.6 | 1.33714296616690e+14 | | -3.1578764858393 | 0.43160821944295 | 0.23149137028573 |
| 48 | -3.1129656344271 | 0.32054543820055 | 0.22087650852779 | | | | -1.6 | 1.33714296616690e+14 | | -2.9263851182536 | 0.17168065065397 | 0.27705186368886 |
| 49 | -2.8920891258993 | 0.20428200186917 | 0.2234635722028 | | | | -1.6 | 1.33714296616690e+14 | | -3.2034369819424 | 0.56275001246286 | 0.25908905446481 |
| 50 | -3.1155448311196 | 0.32632206461879 | 0.22086686917679 | | | | -1.6 | 1.33714296616690e+14 | | -2.9443479274776 | 0.16157544172676 | 0.3611253905561 |
| 51 | -2.8946876139428 | 0.2012346459493 | 0.22509927581738 | | | | -1.6 | 1.33714296616690e+14 | | -3.3084732865332 | 0.88681745554841 | 0.38057662307302 |
| 84 | -3.1539449754815 | 0.42104280896057 | 0.229280298383448 | | | | -1.6 | 1.33714296616690e+14 | | -2.8878723428374 | 0.20941782429379 | 0.22135154543748 |
| 85 | -2.924114991647 | 0.17329028533354 | 0.27047905083228 | | | | -1.6 | 1.33714296616690e+14 | | -3.1092238838849 | 0.312345511414 | 0.2210659185741 |
| 86 | -3.1946210424793 | 0.53634575305182 | 0.25266343912904 | | | | -1.6 | 1.33714296616690e+14 | | -2.8881579365075 | 0.20906261203178 | 0.2214749214734 |
| 87 | -2.9419576033503 | 0.16263201653891 | 0.34757915457324 | | | | -1.6 | 1.33714296616690e+14 | | -3.1096328579548 | 0.31323307927687 | 0.22103473362486 |
| 88 | -3.2895365759235 | 0.82984209080653 | 0.35118493659304 | | | | -1.6 | 1.33714296616690e+14 | | -2.88859812433 | 0.208517209927477 | 0.22167053962502 |
| 89 | -2.9383518213305 | 0.16439139904444 | 0.33622531376525 | | | | -1.6 | 1.33714296616690e+14 | | -3.110268103955 | 0.314617188660697 | 0.2209914919699 |
| 90 | -3.2645713500957 | 0.75262257597526 | 0.3183027825499 | | | | -1.6 | 1.33714296616690e+14 | | -2.889277244758 | 0.20768078283529 | 0.22093624862499 |
| 91 | -2.942743525458 | 0.16079190319238 | 0.37912609286749 | | | | -1.6 | 1.33714296616690e+14 | | -3.1112627300739 | 0.31679153378561 | 0.2250404482587 |
| 92 | -3.325400454133 | 0.93595507351234 | 0.41085777347881 | | | | -1.6 | 1.33714296616690e+14 | | -2.8902364814489 | 0.20640030567874 | 0.22087967237422 |
| 93 | -2.914306710345 | 0.18102640733438 | 0.24867302686915 | | | | -1.6 | 1.33714296616690e+14 | | -3.1128305262747 | 0.3202462608091 | 0.22338575967493 |
| 94 | -3.163215698037 | 0.44616887014525 | 0.23397532958786 | | | | -1.6 | 1.33714296616690e+14 | | -2.8919508539005 | 0.20444668415734 | 0.2208640069323 |
| 95 | -2.9292403692158 | 0.16972419488068 | 0.28643366456179 | | | | -1.6 | 1.33714296616690e+14 | | -3.1153366135754 | 0.325583270338198 | 0.2249538892068 |
| 96 | -3.2156740148776 | 0.60009805657412 | 0.26884823632391 | | | | -1.6 | 1.33714296616690e+14 | | -2.8947280660431 | 0.20148339405666 | 0.2210257390208 |
| 97 | -2.9468257705537 | 0.16057741823464 | 0.38372579689008 | | | | -1.6 | 1.33714296616690e+14 | | -3.1194264958499 | 0.3351165341562 | 0.227918509724849 |
| 98 | -3.3305533714745 | 0.95050333946367 | 0.42095129533249 | | | | -1.6 | 1.33714296616690e+14 | 0.6 | -2.8984009212249 | 0.19703825613249 | |
| 99 | -2.909596176922 | 0.18553752668293 | 2.909598617922 | | | | -1.6 | 1.33714296616690e+14 | | -3.1263193191963 | 0.35121922590688 | 1.5263193191963 |

Figure 1: Método de Newton, raíz 2

| | Condición Inicial | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta_k$ | | | $\gamma_i$ | | | $\alpha_i$ | | | $\alpha_i$ | | | $b_k$ | | |
| Iteración | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ |
| 0 | -2 | -0.727272727273 | 0.71329162455225 | -1 | 0.25 | 0.22099674743515 | -1.6 | -0.557142925707 | 0.6 | -1.4 | 0.07640297289243 | 0.17091458596548 | -1.45 | -0.0809297360207 | 0.24399829749688 |
| 1 | -2.7132916245523 | 0.552741200045235 | 0.4546948468011744 | -0.77900312526485 | -0.047860495197067 | 0.042955240382728 | | | | -1.570145859655 | -0.984857573237376 | 0.01208675232776 | -1.6939982974969 | -0.48132745394779 | 0.0679002428934524 |
| 2 | -3.1679009256970 | 0.459401600249182 | 0.23637598607527 | -0.82195836564758 | 0.0090171965639797 | 0.0076835774562825 | | | | -1.5830013384029 | -1.4975124937963 | 0.0059589934016706 | -1.7619007264314 | -0.718755757616 | 0.636061629575366 |
| 3 | -2.9316141064945 | 0.16822480321341 | 0.29521666372275 | -0.81427478819129 | -0.0013819449337619 | 0.0011886137702213 | | | | -1.5889127241960 | -2.1372625014993 | 0.0035202314922029 | -2.3979620221851 | 0.66494056729333 | 0.328319698753255 |
| 4 | -3.2268307072172 | 0.63458082672942 | 0.27861178621412 | -0.81546160196151 | 0.00021873084328590 | 0.00018761103151010 | | | | -1.5925115039118 | -2.97643283165 | 0.00022429572221750 | -2.0696423234325 | -0.5297507884918 | 0.303478840797297 |
| 5 | -2.9482189640031 | 0.16005910032524 | 0.39062844670568 | -0.81527399093 | -3.44430231960028e-05 | 2.9548475506624e-05 | | | | -1.5924782534 | -4.0937905423883 | 0.0015050349306403 | -2.3732111644055 | 0.60389640051153 | 0.269305044747237 |
| 6 | -3.3442478307088 | 0.98008696694456 | 0.4501002436761 | -0.81530353940551 | 5.42804140359770e-06 | 4.656541648079e-06 | | | | -1.59626473456.46 | -5.5900814463433 | 0.00100408892906704 | -2.1038161199631 | -0.40934183400824 | 0.198167911885.47 |
| 7 | -2.8941475870327 | 0.20186054047316 | 0.22473767238185 | -0.81529888286384 | -8.53222256966.1e-07 | 7.3375696818534e-07 | | | | -1.5973056238553 | -7.5987645337403 | 0.00073456634737.12 | -2.3019840315486 | 0.37948536343.06 | 0.142356125022.54 |
| 8 | -3.1188852859.4145 | 0.33387621530144 | 0.22099153583015 | -0.81529961530.15 | 1.34779801781.2e-07 | 1.1562379857762e-07 | | | | -1.5980401902.4 | -10.298403877452 | 0.00052590047295.6626 | -2.159627906526 | -0.190838511837.63 | 0.0769121491109.4 |
| 9 | -2.8978937235544 | 0.19760091758211 | 0.22749805.18447 | -0.81529950099701 | -2.12382659816.98e-08 | 1.8219707481.12.8e-08 | | | | -1.5985660949696 | -13.928717937551 | 0.0003803636949.6e-05 | -2.2365400556451 | 0.126470497223.4 | 0.0459233984551.81 |
| 10 | -3.1253917827688 | 0.349019678004.7 | 0.22164707356429 | -0.81529951921671 | 3.34667260007.906e-09 | 2.8710146482.42.5e-09 | | | | -1.5989464586395 | -18.811937144329 | 0.00027711223842.242 | -2.19061665719 | -0.0631180961411.74 | 0.0239310596426.09 |
| 11 | -2.9037447092045 | 0.19133069.4309 | 0.23310365.467374 | -0.81529951634569 | -5.27360282006.458e-10 | 4.5240733381746e-10 | | | | -1.5992235708779 | -25.381436970189 | 0.00020295654804.73 | -2.214477168326 | 0.0361362442664 | 0.0133046284689.5 |
| 12 | -3.1368483638783 | 0.37687400523349 | 0.22239759.9501973 | -0.81529951679.81 | 8.31001032785.07e-11 | 7.1289196768021e-11 | | | | -1.5994265274327 | -34.220213891181 | 0.00014921769727.705 | -2.2012430877857 | -0.0190088493153.93 | 0.0071005798070.107 |
| 13 | -2.9128723688585 | 0.18251095011072 | 0.24573646553987 | -0.81529951672681 | -1.30947179783.02e-11 | 1.12335696300.65e-11 | | | | -1.595757.4513 | -46.112629424446 | 0.00011001734323.755 | -2.208343677927 | 0.0104465330077.9 | 0.0038689957644939 |
| 14 | -3.1586084348384 | 0.43253610295064 | 0.23181923000922 | -0.81529951673804 | 2.06335630249.47e-12 | 1.770139590406.24e-12 | | | | -1.596865762473.2 | -62.114018773332 | 8.1283401732.524e-05 | -2.2044736720282 | -0.0050602524321.57 | 0.0020845450360328 |
| 15 | -2.9267896023892 | 0.17139848.56173 | 0.27830872249497 | -0.81529951673627 | -3.25063440594.09e-13 | 2.7888802378584e-13 | | | | -1.5997670458.75 | -83.644343360548 | 6.0145930347533e-05 | -2.2065582223885 | 0.0030440096872.395 | 0.0011298864595441 |
| 16 | -3.2050983248842 | 0.56781721404913 | 0.26035655429362 | -0.81529951673655 | 5.13194058850.5e-14 | 2.129442253854 | | | | -1.5998271918053 | -112.6141190031.45 | 4.4555471493402e-05 | -2.205428335929 | -0.0016421970258825 | 0.00061043952130085 |
| 17 | -2.9447170590.5 | 0.16141030592037 | 0.36706301396955 | | | | | | | -1.5998717472768 | -151.594362399.05 | 3.3033818676032e-05 | -2.2060386754503 | 0.00088932274113.35 | 0.00033029929549411 |
| 18 | -3.3118047845601 | 0.89663857968154 | 0.38621200498407 | | | | | | | -1.5999047810955 | -204.043921101.79 | 2.4506732373863e-05 | -2.2057083716.1548 | -0.00048062184992.405 | 0.00017857070904892 |
| 19 | -2.9255973958.76 | 0.17224079.48187 | 0.27454639.32124 | | | | | | | -1.5999292878278 | -274.617232328.78 | 1.8189163204.1e-05 | -2.2058694686.38 | 0.00026003315509.882 | 9.6595845466629e-05 |
| 20 | -3.2002473788973 | 0.55317600036803 | 0.25670591768086 | | | | | | | -1.5999474769362 | -369.576949054.22 | 1.350471203975.8e-05 | -2.2057903353784 | -0.00014060180086543 | 5.223443733105e-05 |
| 21 | -2.9435414612164 | 0.16192124173181 | 0.35830361925392 | | | | | | | -1.5999609816482 | -497.349765954.34 | 1.0029926340643e-05 | -2.2058425880159 | 7.60493055353597e-05 | 2.8251103644161e-05 |
| 22 | -3.3018450804703 | 0.867084106982 | 0.36979634609668 | | | | | | | -1.5999710109116 | -669.270615479.6 | 7.4496228451117e-06 | -2.2058143369124 | -4.1126659334181e-05 | 1.527863368276e-05 |
| 23 | -2.9320487343736 | 0.16795636.78331 | 0.29693162.77174 | | | | | | | -1.5999784605341 | -900.606747711.17 | 5.5342660505442e-06 | -2.2058261718895 | 2.224291671889e-05 | 8.263010886716e-06 |
| 24 | -3.2289803771454 | 0.64126350945839 | 0.28059018172724 | | | | | | | -1.5999839948001 | -1211.8758632271 | 4.1117883454343e-06 | -2.2058213522655 | -1.2029242438946e-05 | 4.4687798177456e-06 |
| 25 | -2.9483901554181 | 0.15997558.33741 | 0.39761055922781 | | | | | | | -1.5999881065887 | -1630.7033854312 | 3.0551667384859e-06 | -2.2058258210453 | 6.5057442632145e-06 | 2.416826380227e-06 |
| 26 | -3.3460071464.6 | 0.992776495193 | 0.45409646278662 | | | | | | | -1.5999911617554 | -2194.2559602495 | 2.2701987363516e-06 | -2.2058234042189 | -3.5184316313826e-06 | 1.3070697968409e-06 |
| 27 | -2.8919042585.93 | 0.20450224458605 | 0.22335095711843 | | | | | | | -1.5999934319542 | -2952.5430610244 | 1.6868952887957e-06 | -2.2058247112887 | 1.9028510947454e-06 | 7.0689322573259e-07 |
| 28 | -3.1526334375778 | 0.32566827144848 | 0.232566827144848 | | | | | | | -1.5999951193295 | -3972.8548399864 | 1.2536387553354e-06 | -2.2058240043955 | -1.0291023441003e-06 | 3.8230319976407e-07 |
| 29 | -2.8944001537548 | 0.20156734.39703 | 0.22409532040858 | | | | | | | -1.5999963725782 | -5345.733434747 | 9.3163052494738e-07 | -2.2058243866087 | 5.5656176985288e-07 | 2.0675810707971e-07 |
| 30 | -3.1193054741634 | 0.33483889459572 | 0.22101778679786 | | | | | | | -1.5999973042088 | -7193.0076480586 | 6.9234502664273e-07 | -2.2058241799406 | -3.0100077377682e-07 | 1.1181933112780e-07 |
| 31 | -2.8982876876.3655 | 0.19716324105586 | 0.22261233828351 | | | | | | | -1.5999979965538 | -9678.603997636 | 5.1452569493904e-07 | -2.2058242917599 | 1.627879134113e-07 | 6.047473952957e-08 |
| 32 | -3.1261115155.01 | 0.35075255718.9639 | 0.2217510249225 | | | | | | | -1.5999985110795 | -13023.09349754 | 3.8238650170669e-07 | -2.2058242312855 | -8.8039292223149e-08 | 3.2705876673589e-08 |
| 33 | -2.9043604910.975 | 0.19069835.45895 | 0.23379353447523 | | | | | | | -1.5999988939346 | -17523.265068703 | 2.8417607755848e-07 | -2.2058242639914 | 4.7613559258026e-08 | 1.7688061682009e-08 |
| 34 | -3.1381563268.4 | 0.38014651.40816 | 0.22432800063473 | | | | | | | -1.5999991776361 | -23578.462477698 | 2.1119040120.5638e-07 | -2.2058242463033 | -2.5750485371373e-08 | 9.5660045831355e-09 |
| 35 | -2.91383825049.3 | 0.18165637947944 | 0.24739032550854 | | | | | | | -1.5999993888301 | -31726.021992538 | 1.5695551168096e-07 | -2.2058242558694 | 1.3926432561958e-08 | 5.1735558059818e-09 |
| 36 | -3.16121865057.8 | 0.4406914061182 | 0.23300210750039 | | | | | | | -1.5999995457859 | -42688.955403083 | 1.166472425318e-07 | -2.2058242506959 | -7.5317234911354e-09 | 2.7979734085193e-09 |
| 37 | -2.92819764305.74 | 0.17043555042968 | 0.28286649467676 | | | | | | | -1.5999996624331 | -57440.109586439 | 8.6690697953529e-08 | -2.2058242594938 | 4.0733227941089e-09 | 1.513260049439e-09 |
| 38 | -3.31106437733.42 | 0.58597112480418 | 0.26505652889644 | | | | | | | -1.5999997491238 | -77288.498102354 | 6.4427492230124e-08 | -2.2058242519806 | -2.2029438657804e-09 | 8.1837558951747e-10 |
| 39 | -2.94600760683.78 | 0.16089618838808 | 0.37695126765822 | | | | | | | -1.5999998135513 | -103995.45956347 | 4.7881800963597e-08 | -2.2058242252799 | 1.1914012633166e-09 | 4.4259573783734e-10 |
| 40 | -3.32295876496 | 0.9289104077699 | 0.40622538548714 | | | | | | | -1.5999998614331 | -139930.96154075 | 3.5585257851523e-08 | -2.2058242523564 | -6.4433625821105e-10 | 2.393635860466.02e-10 |
| 41 | -2.91673349100.08 | 0.1791103881414 | 0.22751024093225 | | | | | | | -1.5999998970184 | -188283.90878735 | 2.6446612233499e-08 | -2.2058242525958 | 3.4847285589819e-10 | 1.294546920655e-10 |
| 42 | -3.16906366549.75 | 0.46391637389894 | 0.23379534447523 | | | | | | | -1.5999999234663 | -253345.12589175 | 1.9654870619945e-08 | -2.2058242524663 | -1.884614231038.1e-10 | 7.0011996200492e-11 |
| 43 | -2.92323790935.924 | 0.16775427263676 | 0.298285185.1836734 | | | | | | | -1.5999999431199 | -340888.12497325 | 1.4607318243876e-08 | -2.2058242525139 | 1.0192421054098e-10 | 3.786303421036e-11 |
| 44 | -3.23063716159.7 | 0.64642269186264 | 0.28213735126225 | | | | | | | -1.5999999577272 | -458681.44275368 | 1.0856026966266e-08 | -2.2058242524985 | -5.5123054906108e-11 | 2.047784164460.6e-11 |
| 45 | -2.94850260697.5 | 0.15995821484566 | 0.39863649995392 | | | | | | | -1.5999999685832 | -617178.02347418 | 8.0681028524765e-09 | -2.2058242522519 | 2.9812491615091e-11 | 1.1075140804451e-11 |
| 46 | -3.34713676066.514 | 0.99580027904069 | 0.45672107671518 | | | | | | | -1.5999999766479 | -830442.79395724 | 5.9961433596101e-09 | -2.2058242523724 | -1.612847160183e-11 | 5.989875262457e-12 |
| 47 | -2.89041565893.62 | 0.20629291661056 | 0.225499504909 | | | | | | | -1.5999999826475 | -1117400.8147895 | 4.4562815659788e-09 | -2.2058242525139 | 8.7207761908817e-12 | 3.2396307855862e-12 |
| 48 | -3.12965634427.1 | 0.3205454820055 | 0.2208765.0852779 | | | | | | | -1.5999999871037 | -1503516.6276875 | 3.3118701114887e-09 | -2.2058242525106 | -4.7162577913888e-12 | 1.751919328585e-12 |
| 49 | -2.89268912589.93 | 0.204258200186917 | 0.22346535722028 | | | | | | | -1.5999999904156 | -2023054.1035784 | 2.4613533433637e-09 | -2.2058242525124 | 2.5507528332227e-12 | 9.476637382003e-13 |
| 50 | -3.11554483119.6 | 0.32630246461879 | 0.2300686917679 | | | | | | | -1.5999999992877 | -2722116.6971435 | 1.8292567460776e-09 | -2.2058242525114 | -1.3800677285766e-12 | 5.124789481697e-13 |
| 51 | -2.89467610347.37 | 0.20123468493493 | 0.225034604.93 | | | | | | | -1.5999999972538 | -3662739.0729721 | 1.359480776679e-09 | -2.2058242525117 | 7.4449117082264e-13 | 2.7666757773659e-13 |
| 52 | -3.11978689760.2 | 0.33594441288223 | 0.2210506832999 | | | | | | | -1.5999999960657 | -4928391.8120707 | 1.0103600187244e-09 | -2.2058242525117 | -4.0210751740441e-13 | 1.492197450962e-13 |
| 53 | -2.89873620646.03 | 0.1966836077393 | 0.228203153.528913 | | | | | | | -1.5999999970761 | -6631388.9117765 | 7.5090090501024e-10 | -2.2058242525118 | 2.1574284827843e-13 | 7.9936057773011e-14 |
| 54 | -3.12693521749.4 | 0.35269554716761 | 0.235269577.494 | | | | | | | -1.5999999997827 | -8922852.7844076 | 5.5805582377388e-10 | -2.2058242525117 | -1.1508977399974e-13 | 4.2632564145606e-14 |
| 55 | -2.90506151159.95 | 0.1899534377198 | 0.234609461.88595 | | | | | | | -1.5999999993385 | -12006128.048804 | 4.1474224059894e-10 | -2.2058242525118 | 6.2309772220907e-14 | 0.71289760831877 |
| 56 | -3.13967097388.54 | 0.38395903382044 | 0.22475621495017 | | | | | | | -1.5999999998595 | -16154821.785474 | 3.0823299468352e-10 | | | |
| 57 | -2.91491475893.53 | 0.18070102931 | 0.24935746435825 | | | | | | | -1.5999999999108 | -21737090.468849 | 2.2907609142919e-10 | | | |
| 58 | -3.16427222322.935 | 0.4490805099627 | 0.23449220254256 | | | | | | | -1.5999999999371 | -29248298.162599 | 1.7024737175575e-10 | | | |
| 93 | -3.16342526719.345 | 0.18102646373438 | 0.24867302686915 | | | | | | | -1.6 | -9551.02118692.99 | 5.1070259132757e-15 | | | |
| 94 | -3.16321569898.037 | 0.44616887014325 | 0.23397532958786 | | | | | | | -1.6 | -12857.14390548.1 | 3.7747534837255e-15 | | | |
| 95 | -2.92924036921.58 | 0.16974191880682 | 0.286438364.566179 | | | | | | | -1.6 | -16925.86033126.5 | 2.8865798640254e-15 | | | |
| 96 | -3.21567401487.76 | 0.60009805657412 | 0.268848236.32391 | | | | | | | -1.6 | -22663.44010457.4 | 2.2204460492503e-15 | | | |
| 97 | -2.94682578553.7 | 0.16057741823464 | 0.38372796.89008 | | | | | | | -1.6 | -30389.12862749.5 | 1.5543212344752e-15 | | | |
| 98 | -3.30553747454.5 | 0.9505033946367 | 0.42095512953249 | | | | | | | -1.6 | -40519.43832332.5 | 1.3322676295502e-15 | | | |
| 99 | -2.90959861792.2 | 0.185535752668293 | 2.909598617922 | | | | | | | -1.6 | -5571429025707 | 0.6 | | | |

Figure 1: Método de Newton, raíz 3

**Condición Inicial**

| Iteración | $\beta_i$ | | | $\gamma_i$ | | | $\alpha_i$ | | | $b_i$ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $x_k$ | $f_{x_k}$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_{x_k}$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_{x_k}$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_{x_k}$ | $|x_{k+1}-x_k|$ |
| 0 | -1 | 0.25 | 0.2209968747315 | -0.90909090909091 | -0.4 | 0.90909090909091 | -0.76 | -0.07187424423847 | 0.066417364622902 | -0.81 | -0.0071296522431815 | 0.0061513858379981 |
| 1 | -0.779003125266485 | -0.04786049519067 | 0.042955240382728 | -0.802500847777791 | 0.130208362229111 | 0.106590061313 | -0.8264173646229 | 0.015089486810406 | 0.012803331517959 | -0.816151385838 | 0.001150151795475 | 0.00098568716893666 |
| 2 | -0.821958365656758 | 0.009017196563797 | 0.0076835774562825 | -0.81741871966207 | -0.017142100934338 | 0.014917871884157 | -0.81361403310494 | -0.0022722005519605 | 0.0019527380057091 | -0.815165369866906 | -0.0001805546890473 | 0.00015491514360544 |
| 3 | -0.814274788191129 | -0.0013819449337619 | 0.0011868137702213 | -0.814968139885212 | 0.0028628734691351 | 0.0024505797799501 | -0.81556677111065 | 0.00036067538721634 | 0.00030932641702031 | -0.81532061381267 | 2.846785067977e-05 | 2.442142888373e-05 |
| 4 | -0.815461601961151 | 0.0002187308432859 | 0.0001876110315101 | -0.81535179789033 | -0.00044706508788011 | 0.00038365800821183 | -0.81525744469363 | -5.6769025135287e-05 | 4.8702672985068e-05 | -0.81529619256978 | -4.484900423285e-06 | 3.847869344243e-06 |
| 5 | -0.81527399093 | -3.443023196028e-05 | 2.9548475506624e-05 | -0.815291279998402 | 7.054813654601e-05 | 6.0517906307567e-05 | -0.81530614736662 | 8.9471409173326e-06 | 7.6754426505676e-06 | -0.81530004055671 | 7.068223491622e-07 | 6.0636230581057e-07 |
| 6 | -0.815303539405551 | 5.4280414035977e-06 | 4.6565416748079e-06 | -0.81530081470242 | -1.111429503289e-05 | 9.5347184018157e-06 | -0.81529847192397 | -1.4098276441149e-06 | 1.2094521049111e-06 | -0.81529943419441 | -1.113790279873e-07 | 9.548858023878e-08 |
| 7 | -0.815298882862384 | -8.553222569661e-07 | 7.3375696818534e-07 | -0.81529931220729 | 1.7514247745957e-06 | 1.5024951309783e-06 | -0.81529968137607 | 2.2215808362584e-07 | 1.9058302758168e-07 | -0.8152995297433 | 1.7550832536876e-08 | 1.505656605925e-08 |
| 8 | -0.815299616206208 | 1.3477989171812e-07 | 1.15623798575762e-07 | -0.81529954896574 | -2.759835575629e-07 | 2.3675844307292e-07 | -0.81529949079304 | -3.5007085624439e-08 | 3.0031577447076e-08 | -0.81529951468694 | -2.766157904719e-09 | 2.3725426068211e-09 |
| 9 | -0.815299500091701 | -2.1238265981698e-08 | 1.8219700748112e-08 | -0.81529951165792 | 4.3488830938355e-08 | 3.7307821942889e-08 | -0.81529952082462 | 5.516328795515e-09 | 4.7323005514244e-09 | -0.81529951705948 | 4.357980084003e-10 | 3.7385927686984e-10 |
| 10 | -0.815299519217671 | 3.3466726007906e-09 | 2.8710146482425e-09 | -0.81529951753679 | -6.8528593689817e-09 | 5.8788719448089e-09 | -0.81529951609232 | -8.6924919088266e-10 | 7.4570394303919e-10 | -0.81529951668562 | -6.871932009343e-11 | 5.891653333382e-11 |
| 11 | -0.815299516347981 | -5.273602064580e-10 | 4.5240733381746e-10 | -0.81529951661041 | 1.0798561292282e-09 | 9.263776412638e-10 | -0.81529951683802 | 1.3697404128611e-10 | 1.1750611594863e-10 | -0.81529951674453 | 1.0820976433851e-11 | 9.283187981008e-12 |
| 12 | -0.815299516672681 | 8.3100103278507e-11 | 7.1289196768021e-11 | -0.81529951675639 | -1.701606783101e-10 | 1.459760090583e-10 | -0.81529951672052 | -2.1584066523191e-11 | 1.8516299604698e-11 | -0.81529951673525 | -1.705093410272e-12 | 1.4627188349436e-12 |
| 13 | -0.815299516673627 | -1.3094717978302e-11 | 1.1233569630065e-11 | -0.81529951673338 | 2.681341669567e-11 | 2.3002488802604e-11 | -0.81529951673903 | 3.4010659345742e-12 | 2.9176661087149e-12 | -0.81529951673671 | 2.6851480614741e-13 | 2.303712760972e-13 |
| 14 | -0.815299516673655 | 2.0633563024947e-12 | 1.7701395904623e-12 | -0.81529951673701 | -4.2252166778798e-12 | 3.6246561307962e-12 | -0.81529951673612 | -5.3593512259557e-13 | 4.5974335449728e-13 | -0.81529951673648 | -4.2198658393629e-14 | 1.391258705652 |
| 15 | | -3.2506344059409e-13 | 2.7888802378584e-13 | -0.81529951673644 | 6.6557134694074e-13 | 5.7098770156472e-13 | -0.81529951673658 | 8.4397316787265e-14 | 7.8452767506872e-14 | | | |
| 16 | | 5.131940588505e-14 | 2.129442253854 | -0.81529951673653 | -1.0470618120148e-13 | 8.9817042692175e-14 | | | | | | |
| 17 | | | | | 1.641734548554e-14 | 2.4965052678236 | | | | | | |
| 18 | | | | | | | | | | | | |

Figure 1: Método de Newton, raíz 4

Figure 1: Método de Newton, raíz 5

| Iteración | β_i | | | γ_i | | | Condición Inicial x_i | | | α_i | | | b_i | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ | $x_k$ | $f_k$ | $|x_{k+1}-x_k|$ |
| 0 | 1 | -0.769230769923077 | 3.4302392435587 | 2 | -1.33333333333333 | 0.689530561800636 | 1.7 | 3.35613727715896 | 0.0202624339033739 | 1.65 | 3.35613727715896 | 0.0146107229448711 | 1.65 | -12.618932875964 | 0.0146107229448711 |
| 1 | -2.43023924335587 | 0.728693731506764 | 0.428537293390076 | 2.689530561806 | -1.41787603243702 | 13.1120695313274 | 1.720262433037 | 1.30958256044503 | 0.023821692764215 | 1.635438927705133 | 1.30958256044503 | 0.0292927100334617 | 1.635438927705133 | -7.5904869771828 | 0.0292927100334617 |
| 2 | -2.00170194965779 | -0.723351777313934 | 0.697178648919651 | -10.42253869568 | 4.38805556110007 | 1.5801405345592 | 1.744084126668 | 0.26463690868971 | 0.0127212644569271 | 1.6061621767167 | 0.26463690868971 | 0.0624124787301583 | 1.6061621767167 | -4.7710690639886 | 0.0624124787301583 |
| 3 | -2.69888505985776 | 0.584146281193991 | 0.512025151958149 | -8.842398435009 | 2.61559621716391 | 0.85780439437427 | 1.756805439437 | -0.068704118134231 | 0.0052721524114405 | 1.5437493894151 | -0.068704118134231 | 0.143923273596375 | 1.5437493894151 | -3.109607541435 | 0.143923273596375 |
| 4 | -3.21090211615915 | 0.585476113562066 | 0.261492581003893 | -9.70020829383 | 3.60329181791840 | 0.99164783422833 | 1.751533867013 | 0.057349547242315 | 0.0036369128537186 | 1.3998261134513 | 0.057349547242315 | 0.3197765356037 | 1.3998261134513 | -1.870642167408 | 0.3197765356037 |
| 5 | -2.94597638081201 | 0.16090859470561 | 0.3766982096378 | -10.16090852097 | 4.06439641385304 | 0.92490854965603 | 1.755164779867 | -0.031080933873881 | 0.002246495468793 | 1.0800495778476 | -0.031080933873881 | 0.9927033930202 | 1.0800495778476 | -0.82327540369202 | 0.9927033930202 |
| 6 | -3.32267451775579 | 0.928177087777755 | 0.405692005345371 | -11.72621707744 | 4.31321079933360 | 0.92490854965603 | 1.752918230320 | 0.0227454954687 | 0.0015155813611947 | 0.0873416184827437 | 0.0227454954687 | 0.64628258981125 | 0.0873416184827437 | -0.44951944365998 | 0.64628258981125 |
| 7 | -2.91698251241261 | 0.178931180680311 | 0.25337348520263 | -12.65112562710 | 5.11770916766 | 1.2906182354711 | 1.754433811681 | -0.013865381062984 | 0.00097586553460063 | -0.55893640494981 | -0.013865381062984 | 0.42410384616493 | -0.55893640494981 | -0.26419005035035 | 0.42410384616493 |
| 8 | -3.17035599761521 | 0.460285558821681 | 0.23762656138413 | -13.94174386257 | 4.07290475370730 | 2.0379891492803 | 1.753457943147 | 0.0095693213774073 | 0.00060499665512345 | -0.98304025114874 | 0.0095693213774073 | 0.19741285000778 | -0.98304025114874 | 0.22918426267752 | 0.19741285000778 |
| 9 | -2.93272943623311 | 0.167541786724861 | 0.299688223703626 | -15.97973011849 | 4.69474543463700 | 6.5563308113668 | 1.754107909698 | -0.0060971798295 | 0.00042406344055435 | -0.78562740114096 | -0.0060971798295 | 0.0349353499172 | -0.78562740114096 | -0.039308339582087 | 0.0349353499172 |
| 10 | -3.23241673267371 | 0.651970788371 | 0.283820526783874 | -22.53606383216 | 10.10278986908 | 6.5636204026347 | 1.753683846258 | 0.0004097769417 | 0.00026063083729957 | -0.825805095105819 | 0.0004097769417 | 0.00609808112378 | -0.825805095105819 | 0.0071468142464752 | 0.00609808112378 |
| 11 | -2.94859714542861 | 0.159923755333515 | 0.389544821548451 | -29.09968422585 | 9.46076364222 | 1.264291714268 | 1.753964477009 | -0.00265996831291 | 0.00018403811412677 | -0.8144828699344 | -0.00265996831291 | 0.00094571954473477 | -0.8144828699344 | -0.001101014538131567 | 0.00094571954473477 |
| 12 | -3.34814196697771 | 0.998465520459414 | 0.459066552530779 | -27.83538925115 | 9.61689094291 | 9.68099448294614 | 1.753780438980 | 0.0017668611783124 | 0.00012428294783 | -0.815428589479140 | 0.0017668611783124 | 0.0001494020751896 | -0.815428589479140 | 0.000174177983494559 | 0.0001494020751896 |
| 13 | -2.88907541166931 | 0.207928704199932 | 0.221890206461747 | -28.80348699453 | 10.34349601425 | 9.91713398543 | 1.753901867275 | -0.0011560521695249 | 7.980268887863e-05 | -0.8152791874039 | -0.0011560521695249 | 2.35330160082e-05 | -0.8152791874039 | -2.7431285097254e-05 | 2.35330160082e-05 |
| 14 | -3.11095616316771 | 0.31614033289 | 0.220951141913188 | -30.70620979986 | 11.77465550661 | 9.80242066805 | 1.753822064586 | 0.00070397071053 | 5.258398288643e-05 | -0.8153207204204 | 0.00070397071053 | 3.70850634940e-06 | -0.8153207204204 | 7.980268887863e-05 | 3.70850634940e-06 |
| 15 | -2.89071448734831 | 0.20677557212966 | 0.222345728371661 | -30.70086304672 | 12.44094208374 | 1.03757561220391 | 1.753877116880 | -0.000050157430717 | 3.458957182500e-05 | -0.8152990119140 | -0.000050157430717 | 5.843171303236e-07 | -0.8152990119140 | -6.811871930928e-07 | 5.843171303236e-07 |
| 16 | -3.11236020005651 | 0.319206616423122 | 0.220892788968611 | -31.73843916884 | 12.35766042307 | 9.46046654773 | 1.753840059057 | 0.00033007243198 | 2.277863121369e-05 | -0.8152995059285 | 0.00033007243198 | 9.208388983613e-08 | -0.8152995059285 | 1.073399932195e-07 | 9.208388983613e-08 |
| 17 | -2.89146741118791 | 0.20502446266466 | 0.223131312771251 | -32.68448582362 | 13.49729968694 | 1.1014455394813 | 1.753862837688 | -0.00020174352059 | 1.498951585254e-05 | -0.8152995040201 | -0.00020174352059 | 1.451034503663e-08 | -0.8152995040201 | -1.691435951741e-08 | 1.451034503663e-08 |
| 18 | -3.11458053395911 | 0.324139030141004 | 0.220859255265801 | -33.78593136310 | 12.48067858089 | 0.91438620327798 | 1.753847848173 | 0.00014324381088 | 9.868716786524e-06 | -0.8152995187117 | 0.00014324381088 | 2.286503653081e-09 | -0.8152995187117 | 2.665322223643e-09 | 2.286503653081e-09 |
| 19 | -2.89372127869331 | 0.202357371130214 | 0.224467493836861 | -34.69551446381 | 14.14139237601 | 1.04398623160 | 1.753857716729 | -9.4243753184905e-05 | 6.495216710922e-06 | -0.8152995164252 | -9.4243753184905e-05 | 3.603015663602e-10 | -0.8152995164252 | -4.199948557108e-09 | 3.603015663602e-10 |
| 20 | -3.11818178788631 | 0.198342257234829 | 0.220952780494451 | -35.74353407826 | 13.89957561140 | 0.94109938351 | 1.753851221673 | 6.2055560085252e-05 | 4.275851490008e-06 | -0.8152995167857 | 6.2055560085252e-05 | 5.677525116709e-11 | -0.8152995167857 | 6.618160312016e-11 | 5.677525116709e-11 |
| 21 | -2.89722900738691 | 0.346192263572272 | 0.221487437420481 | -36.68463346177 | 15.20257008164 | 1.1020577433971 | 1.753854974879 | -4.0839226099351e-05 | 2.814384537863e-06 | -0.8152995167287 | -4.0839226099351e-05 | 8.946399177034e-12 | -0.8152995167287 | -1.042866268161e-11 | 8.946399177034e-12 |
| 22 | -3.12419319396551 | 0.19240930266195 | 0.231982286586951 | -37.78669120517 | 14.00974669510 | 0.9170670519110 | 1.753852683103 | 2.6886023974143e-05 | 1.852626847482e-06 | -0.8152995167377 | 2.6886023974143e-05 | 1.409761996669e-12 | -0.8152995167377 | 1.643315478022e-12 | 1.409761996669e-12 |
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| 24 | -3.13468804313141 | 0.183985489916529 | 0.243097229507601 | -39.73546460682 | 15.64840270254 | 0.9558656722039 | 1.753853316274 | 1.164904398187e-05 | 8.027155609102e-07 | -0.8152995167365 | 1.164904398187e-05 | 1.390526304308e-13 | -0.8152995167365 | 4.073938379500e-14 | 1.390526304308e-13 |
| 25 | -2.91125653900911 | 0.42213734222755 | 0.230972838542061 | -40.69133028049 | 16.80181911593 | 1.0758125263633 | 1.753854118990 | -7.6676393697791e-06 | 5.283793129656e-07 | ... | ... | ... | ... | ... | ... |
| 26 | -3.15433576851671 | 0.154337685167 | 0.229972838534206 | -41.76714281687 | 15.89457672192 | 0.9221565847747 | 1.753853590610 | 5.0473299398486e-06 | 3.478062930995e-07 | ... | ... | ... | ... | ... | ... |
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| 54 | -3.14638473525691 | 0.40114687401558 | 0.226909509073305 | -69.75687166000 | 27.19973977091 | 0.9373580085312 | 1.753853800353 | 4.1491046487204e-11 | 2.859046333014e-12 | | | | | | |
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| 56 | -3.17820293125921 | 0.48831995812939 | 0.242054961208681 | -71.76360792215 | 27.78922610492 | 0.9330011473300 | 1.753853800354 | 1.7976618559813e-11 | 1.238786850876712e-12 | | | | | | |
| 57 | -2.93614797005051 | 0.16556678450464 | 0.314956467819191 | -72.69600939543 | 30.22019349234 | 1.0611624364361 | 1.753853800354 | -1.1828086907503e-11 | 8.1512574467979e-13 | | | | | | |
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| 61 | -2.89405206749981 | 0.20197164934874 | 0.220674934836861 | -76.69652845055 | 31.91062531143 | 1.0617503149933 | 1.753853800355 | -2.2225755306677e-12 | 1.532107773982e-13 | | | | | | |
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| 68 | -3.15763925000641 | 0.43096191884829 | 0.266468471544 | -83.75923541617 | 32.67627106807 | 0.9375291308799 | 1.753853800354 | 1.1825656975056e-13 | 8.216505038222e-15 | | | | | | |
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