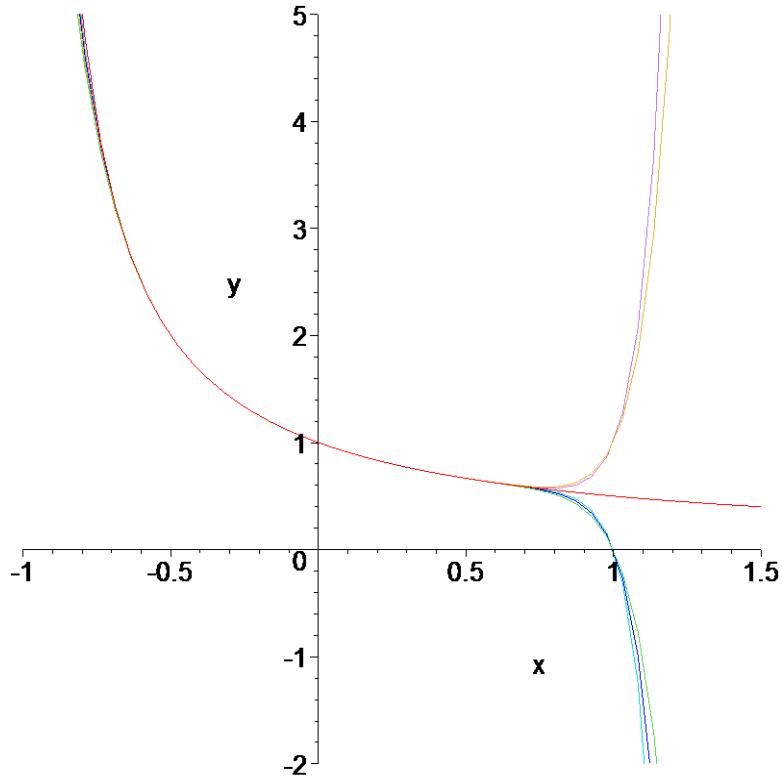


```

[> restart;
[> for i from 1 to 15 do
[> f[i] := convert(series(1/(1+x),x=0,i+1),polynom);
[> end do:
[> plot([1/(1+x),seq(f[i],i=11..15)],x=-1..1.5,y=-2..5,legend=[ '1/(1+x)',seq('f'[i],i=11..15)]);

```

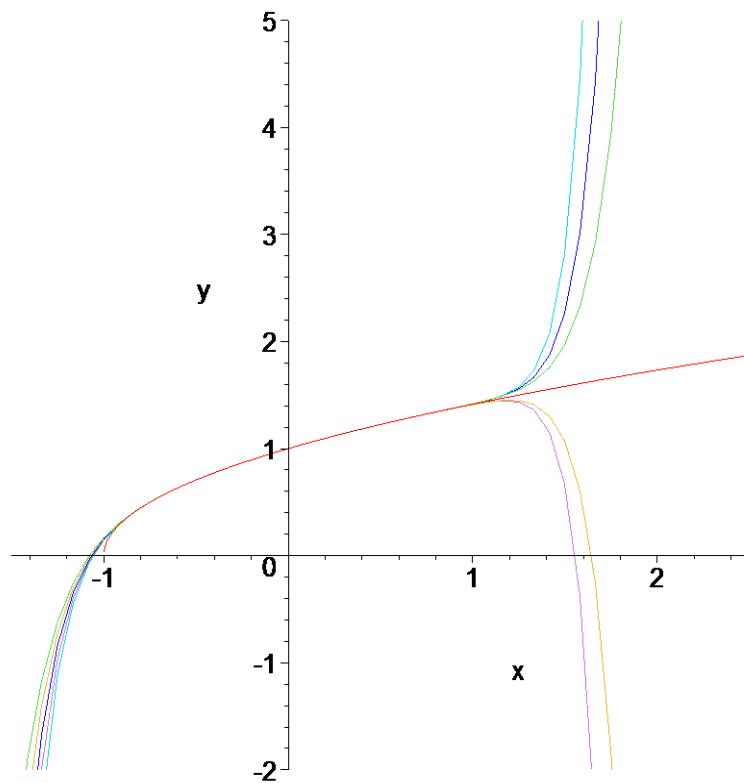


	$1/(1+x)$
	$1-x+x^2-x^3+x^4-x^5+x^6-x^7+x^8-x^9+x^10-x^11$
	$1-x+x^2-x^3+x^4-x^5+x^6-x^7+x^8-x^9+x^10-x^11+x^12$

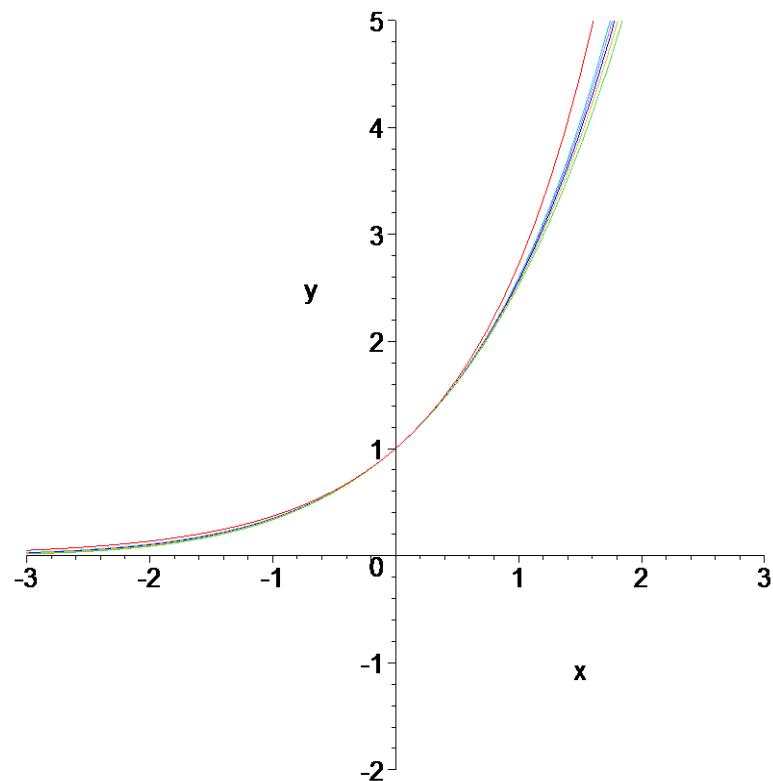
```

[> for i from 1 to 15 do
[> g[i] := convert(series((1+x)^(1/2),x=0,i+1),polynom);
[> end do:
[> plot([(1+x)^(1/2),seq(g[i],i=11..15)],x=-1.5..2.5,y=-2..5,legend=[ '(1+x)^(1/2)',seq('g[i]',i=11..15)]);

```

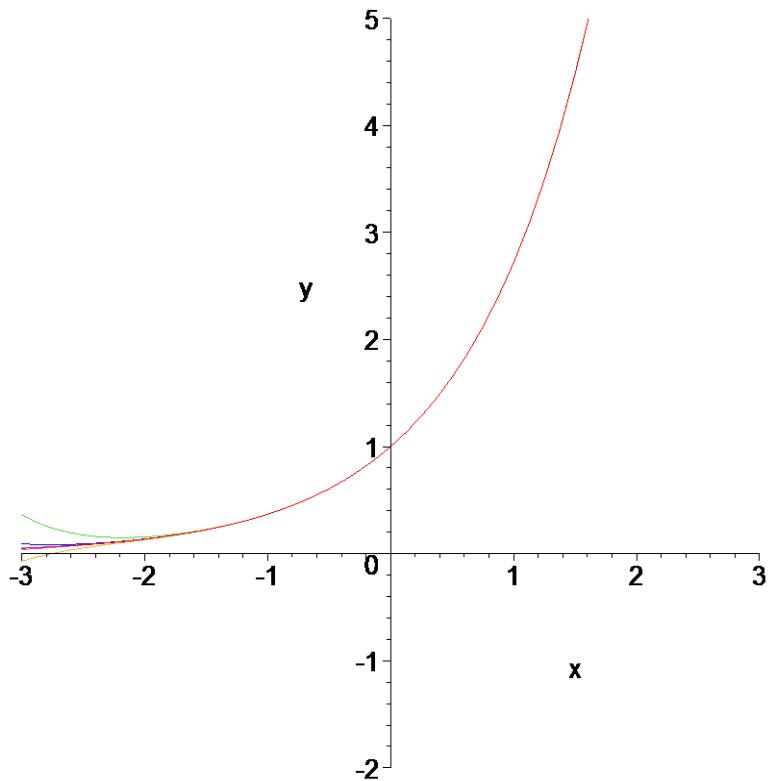


	(1+x) ^(1/2)
	1+1/2*x-1/8*x^2+1/16*x^3-5/128*x^4+7/256*x^5-21/1024*x^6+35/2048*x^7-315/4096*x^8+105/8192*x^9-315/16384*x^10+105/32768*x^11-315/65536*x^12+105/131072*x^13-315/262144*x^14+105/524288*x^15-315/1048576*x^16+105/2097152*x^17-315/4194304*x^18+105/8388608*x^19-315/16777216*x^20+105/33554432*x^21-315/67108864*x^22+105/134217728*x^23-315/268435456*x^24+105/536870912*x^25-315/1073741824*x^26+105/2147483648*x^27-315/4294967296*x^28+105/8589934592*x^29-315/17179869184*x^30+105/34359738368*x^31-315/68719476736*x^32+105/137438953472*x^33-315/274877906944*x^34+105/549755813888*x^35-315/1099511627776*x^36+105/2199023255552*x^37-315/4398046511104*x^38+105/8796093022208*x^39-315/17592186044416*x^40+105/35184372088832*x^41-315/70368744177664*x^42+105/140737488355328*x^43-315/281474976710656*x^44+105/562949953421312*x^45-315/1125899906842624*x^46+105/2251799813685248*x^47-315/4503599627370496*x^48+105/9007199254740992*x^49-315/18014398509481984*x^50+105/36028797018963968*x^51-315/72057594037927936*x^52+105/144115188075855872*x^53-315/288230376151711744*x^54+105/576460752303423488*x^55-315/1152921504606846976*x^56+105/2305843009213693952*x^57-315/4611686018427387904*x^58+105/9223372036854775808*x^59-315/18446744073709551616*x^60+105/36893488147419103232*x^61-315/73786976294838206464*x^62+105/147573952589676412928*x^63-315/295147905179352825856*x^64+105/590295810358705651712*x^65-315/1180591620717411303424*x^66+105/2361183241434822606848*x^67-315/4722366482869645213696*x^68+105/9444732965739290427392*x^69-315/18889465931478580854784*x^70+105/37778931862957161709568*x^71-315/75557863725914323419136*x^72+105/151115727451828646838272*x^73-315/302231454903657293676544*x^74+105/604462909807314587353088*x^75-315/1208925819614629174706176*x^76+105/2417851639229258349412352*x^77-315/4835703278458516698824704*x^78+105/9671406556917033397649408*x^79-315/19342813113834066795298816*x^80+105/38685626227668133590597632*x^81-315/77371252455336267181195264*x^82+105/154742504910672534362390528*x^83-315/309485009821345068724781056*x^84+105/618970019642690137449562112*x^85-315/1237940039285380274898124224*x^86+105/2475880078570760549796248448*x^87-315/4951760157141521099592496896*x^88+105/9903520314283042199184993792*x^89-315/19807040628566084398369975584*x^90+105/39614081257132168796739951168*x^91-315/79228162514264337593479902336*x^92+105/158456325028528675186959804672*x^93-315/316912650057057350373919609344*x^94+105/633825300114114700747839218688*x^95-315/1267650600228229401495678437376*x^96+105/2535301200456458802991356874752*x^97-315/5070602400912917605982713749504*x^98+105/10141204801825835211965427498008*x^99-315/20282409603651670423930854996016*x^100+105/40564819207303340847861709992032*x^101-315/81129638414606681695723419984064*x^102+105/162259276829213363391446839968128*x^103-315/324518553658426726782893679936256*x^104+105/649037107316853453565787359872512*x^105-315/1298074214633706907131574719745024*x^106+105/2596148429267413814263149439490048*x^107-315/5192296858534827628526298878980096*x^108+105/10384593717069655257052597757960192*x^109-315/20769187434139310514105195515920384*x^110+105/41538374868278621028205391031840768*x^111-315/83076749736557242056410782063681536*x^112+105/166153499473114484112821564127363072*x^113-315/332306998946228968225643128254726144*x^114+105/664613997892457936451286256509452288*x^115-315/1329227995784915872902572513018855576*x^116+105/2658455991569831745805145026037711152*x^117-315/5316911983139663491610290052075422304*x^118+105/10633823966279326983220580104150844608*x^119-315/21267647932558653966441160208301689216*x^120+105/42535295865117307932882320416603378432*x^121-315/85070591730234615865764640833206756864*x^122+105/170141183460469231731529281666413513728*x^123-315/340282366920938463463058563332827027456*x^124+105/680564733841876926926117126665654054912*x^125-315/1361129467683753853852234253331308109824*x^126+105/2722258935367507707704468506662616219648*x^127-315/5444517870735015415408937013325232439296*x^128+105/10889035741470030830817874026650464785792*x^129-315/21778071482940061661635748053300819571584*x^130+105/43556142965880123323271496106600163943168*x^131-315/87112285931760246646542982213200327886336*x^132+105/174224571863520493293085844426400655772672*x^133-315/348449143727040986586171688852801311545344*x^134+105/696898287454081973172343377705602622785688*x^135-315/1393796574908163946344686755411205245573376*x^136+105/2787593149816327892689373510822410491146752*x^137-315/5575186299632655785378747021644820982293504*x^138+105/1115037259926531157075744404328164196447008*x^139-315/2230074519853062314151488808656328392894016*x^140+105/4460149039706124628302977617312656785780032*x^141-315/8920298079412249256605955234625313575560064*x^142+105/17840596158824498513211910469250627151120128*x^143-315/35681192317648997026423820938501254202240256*x^144+105/71362384635297994052847641877002508404480512*x^145-315/14272476927059598810569528375400501680881024*x^146+105/28544953854119197621139056750800253361762048*x^147-315/57089857708238395242278113501600506723524096*x^148+105/11417971541647678548455622700320051346708192*x^149-315/22835943083295357096911245400640052694163984*x^150+105/45671886166590714193822490801280055388327968*x^151-315/91343772333181428387644981602560051766555936*x^152+105/182687544666362856775289963205120053533111872*x^153-315/365375089332725713550579926410240057066235744*x^154+105/730750178665451427101159852820480054132471488*x^155-315/1461500357330902854202319705640960058264949776*x^156+105/2923000714661805708404639411281920056529899552*x^157-315/5846001429323611416809278822563840053059799104*x^158+105/1169200285864722283361855764512768005611958208*x^159-315/2338400571729444566723711529025536005223856416*x^1510+105/4676801143458889133447423058051072005447712832*x^1511-315/9353602286917778266894846116102144005885425664*x^1512+105/18707204573835556533789692232204288005770851328*x^1513-315/37414409147671113067579384464408576005551702656*x^1514+105/74828818295342226135158768928817120051134051312*x^1515-315/14965763659068445227031753785763440052266802624*x^1516+105/29931527318136890454063507571526880054533605248*x^1517-315/59863054636273780908127015143053760059067210496*x^1518+105/11972610927254756181625403028602752005803442096*x^1519-315/23945221854509512363250806057205504005606884192*x^1520+105/47890443709019024726501612114411008005203768384*x^1521-315/95780887418038049453003224228822016005407536768*x^1522+105/191561774836076098906006448457644032005803513536*x^1523-315/383123549672152197812001288915288064005607027072*x^1524+105/76624709934430439562400257783057612800520340544*x^1525-315/153249419868860879124800515566115225600540170088*x^1526+105/306498839737721758249601031132230451200580340176*x^1527-315/612997679475443516498402062264460902400560680352*x^1528+105/122599535895088703299680412452892180480052034072*x^1529-315/245198871790177406599360824905784360960054068144*x^1530+105/490397743580354813198721649811568731920058034088*x^1531-315/980795487160709626397443298023137463840056068288*x^1532+105/1961590974321419252794886596046274877680052034176*x^1533-315/3923181948642838505589773192092549755360054068552*x^1534+105/7846363897285677005179556384185099510720058034104*x^1535-315/15692727794571354010359132768370499021440056068208*x^1536+105/313854555891427080207182655367409980428800520340016*x^1537-315/627709111782854160414365310734819960857600540680032*x^1538+105/12554182235657083208287306214696399217152005803400064*x^1539-315/25108364471314166416574612429392798434304005606800128*x^1540+105/50216728942628332833148724858785596868080052034000256*x^1541-315/10043345788525666566629444917757193736160054068000512*x^1542+105/20086691577051333133258889835514387472320058034000104*x^1543-315/40173383154102666266517779671028754944640056068000208*x^1544+105/80346766308205332533035559342057509889280052034000416*x^1545-315/160693532616410665066071118684115019775680054068000832*x^1546+105/321387065232821330132142237368230039551360052034001664*x^1547-315/642774130465642660264284474736460079027360054068003328*x^1548+105/1285548260931285320528568949473120015854736005203400664*x^1549-315/2571096521862570641057137898946400317094736005406801328*x^1550+105/5142193043725141282144275797892800634189473600520340336*x^1551-315/102843860874502825642855559577856001283789473600540680672*x^1552+105/205687721749005651288511119155712002567578947360052034136*x^1553-315/4113754434980113025770222383114240051351578947360054068136*x^1554+105/82275088699602260515404447662284800102731578947360052034272*x^1555-315/1645501773992045210308888953245696002054631578947360054068272*x^1556+105/32910035479840904206177779064913920041092631578947360052034544*x^1557-315/658200709596818084123555581298278400821852631578947360054068544*x^1558+105/1316401419193636168247111162976568001643705263157894736005203908*x^1559-315/2632802838387272336494222325953136003287410526315789473600540784*x^1560+105/5265605676774544672988444651866272006574820526315789473600520768*x^1561-315/1053121135354908934597688930373254401314840526315789473600540156*x^1562+105/21062422707098178691953778607465088026296805263157894736005203136*x^1563-315/4212484541419635738387555721493017605259360526315789473600540632*x^1564+105/84249690828392714767751114429860320105187205263157894736005203264*x^1565-315/1684993816567854295355022288582064021037440526315789473600540664*x^1566+105/3369987633135708590700444577164128042074805263157894736005203528*x^1567-315/673997526627141718140088915432825608414960526315789473600540736*x^1568+105/1347995053254283436280177830865651216829205263157894736005203512*x^1569-315/269599010650856687256035566173130243365840526315789473600540768*x^1570+105/539198021301713374512071132346260467316805263157894736005203524*x^1571-315/107839604260342674902414266469252093463360526315789473600540736*x^1572+105/215679208520685349804828533338504186667205263157894736005203512*x^1573-315/43135841704137069960965706667700837333440526315789473600540768*x^1574+105/86271683408274139921931413335401674666805263157894736005203524*x^1575-315/17254336681654827984386282667080335333360526315789473600540736*x^1576+105/345086733632596559687725653341606674667205263157894736005203512*x^1577-315/69017346726519311937545130668321335333440526315789473600540768*x^1578+105/138034693453038623875085261336642667333605263157894736005203524*x^1579-315/276069386906077247750170522673285335333440526315789473600540736*x^1580+105/552138773812154495500341045346562667333605263157894736005203512*x^1581-315/110427754762430899100068209069313335333440526315789473600540768*x^1582+105/2208555095248617982001364181386253335333605263157894736005203524*x^1583-315/441711019049723596400272836277253335333440526315789473600540736*x^1584+105/883422038099447192800545672554503335333605263157894736005203512*x^1585-315/176684407619889438560109134510903335333440526315789473600540768*x^1586+105/353368815239778877120218269021803335333605263157894736005203524*x^1587-315/706737630479557754240436538043603335333440526315789473600540736*x^1588+105/1413475260959115508480873076087203335333605263157894736005203512*x^1589-315/2826950521918231016961746152174403335333440526315789473600540768*x^1590+105/5653901043836462033923492



- | | |
|---|---|
| — — — — — — | e^x
$(1+1/6x)^6$
$(1+1/7x)^7$
$(1+1/8x)^8$
$(1+1/9x)^9$
$(1+1/10x)^{10}$ |
|---|---|

```
> plot([exp(x),seq(r[i],i=6..10)],x=-3..3,y=-2..5,legend=['e^x',seq('r[i]',i=6..10))];
```



e^x
$1+x+1/2*x^2+1/6*x^3+1/24*x^4+1/120*x^5+1/720*x^6$

```

> for i from 1 to 15 do
> e[i] := evalf(subs(x=1,h[i]));
> end do;
e1 := 2.
e2 := 2.250000000
e3 := 2.370370370
e4 := 2.441406250
e5 := 2.488320000
e6 := 2.521626372
e7 := 2.546499697
e8 := 2.565784514
e9 := 2.581174792

```

$e_{10} := 2.593742460$

$e_{11} := 2.604199012$

$e_{12} := 2.613035290$

$e_{13} := 2.620600888$

$e_{14} := 2.627151556$

$e_{15} := 2.632878718$

[>