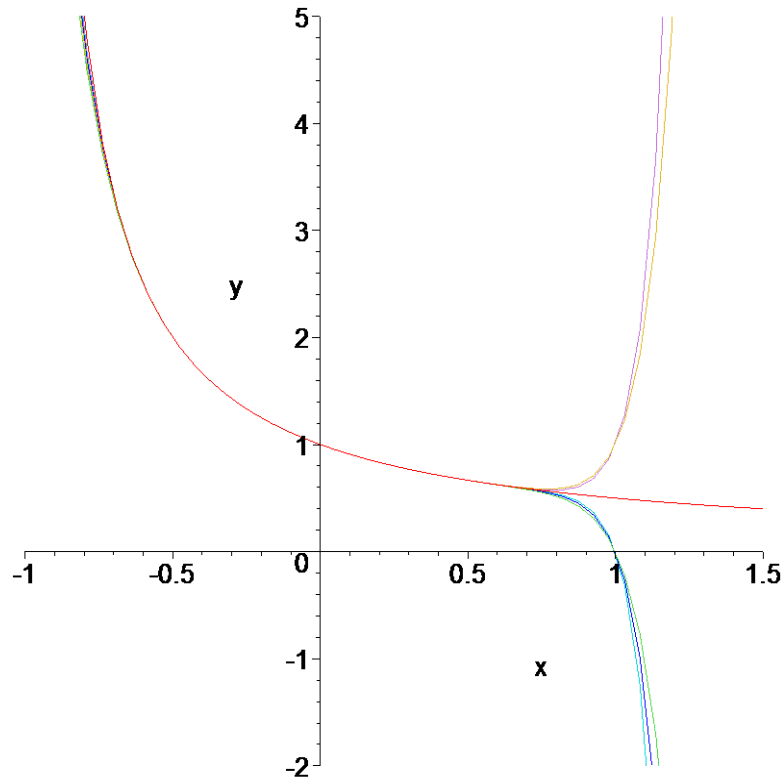








```

> 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)]);

```

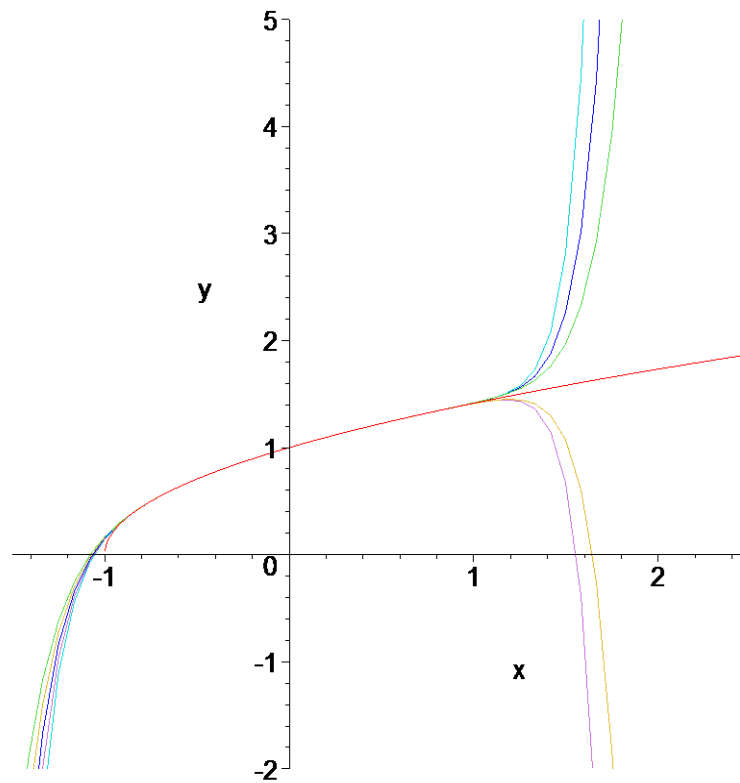








	$1/(1+x)$
	$1-x+x^2-x^3+x^4-x^5+x^6-x^7+x^8-x^9+x^{10}-x^{11}$
	$1-x+x^2-x^3+x^4-x^5+x^6-x^7+x^8-x^9+x^{10}-x^{11}+x^{12}$
	$1-x+x^2-x^3+x^4-x^5+x^6-x^7+x^8-x^9+x^{10}-x^{11}+x^{12}-x^{13}$
	$1-x+x^2-x^3+x^4-x^5+x^6-x^7+x^8-x^9+x^{10}-x^{11}+x^{12}-x^{13}+x^{14}$
	$1-x+x^2-x^3+x^4-x^5+x^6-x^7+x^8-x^9+x^{10}-x^{11}+x^{12}-x^{13}+x^{14}-x^{15}$

```

> 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)]);

```

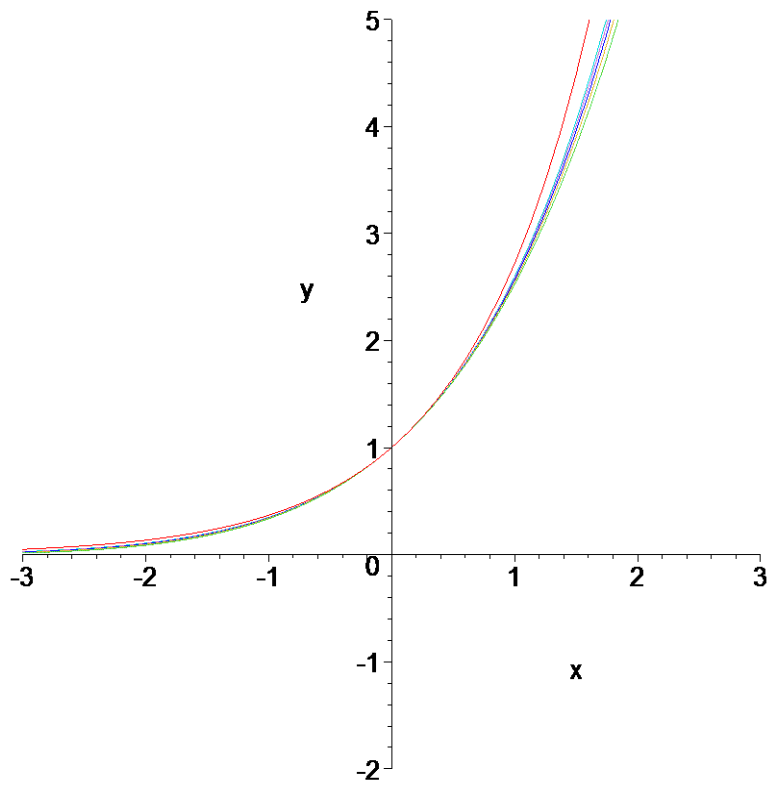


	$(1+x)^{1/2}$
	$1+1/2*x-1/8*x^2+1/16*x^3-5/128*x^4+7/256*x^5-21/1024*x^6$
	$1+1/2*x-1/8*x^2+1/16*x^3-5/128*x^4+7/256*x^5-21/1024*x^6$
	$1+1/2*x-1/8*x^2+1/16*x^3-5/128*x^4+7/256*x^5-21/1024*x^6$
	$1+1/2*x-1/8*x^2+1/16*x^3-5/128*x^4+7/256*x^5-21/1024*x^6$
	$1+1/2*x-1/8*x^2+1/16*x^3-5/128*x^4+7/256*x^5-21/1024*x^6$

```

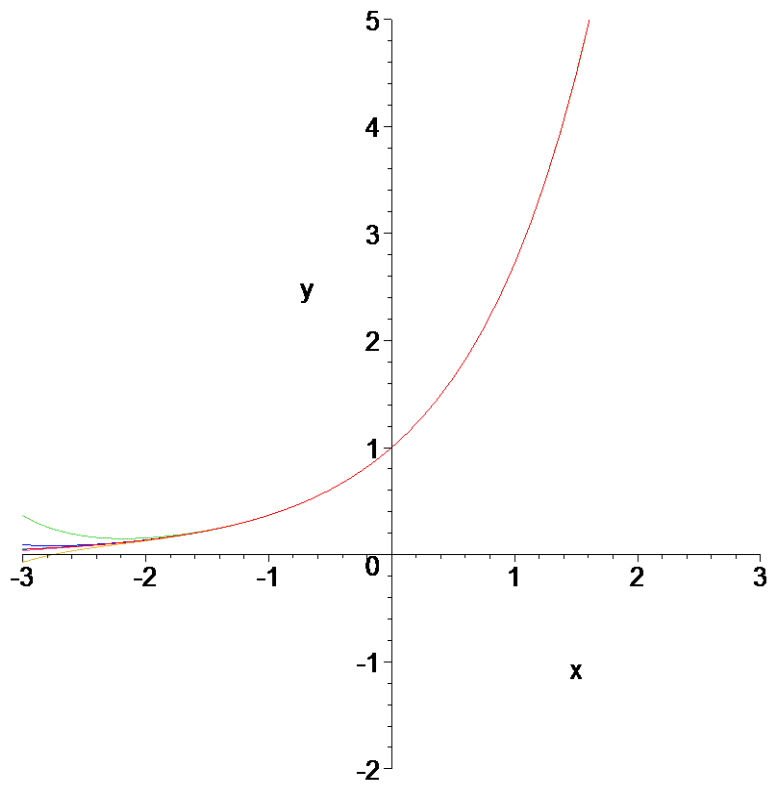
> for i from 1 to 15 do
> h[i] := (1+x/i)^i;
> r[i] := convert(series(exp(x),x=0,i+1),polynom);
> end do;
> plot([exp(x),seq(h[i],i=6..10)],x=-3..3,y=-2..5,legend=['e^x',seq('h[i]',i=6..10)]);







```



— e^x
— $(1 + \frac{1}{6}x)^6$
— $(1 + \frac{1}{7}x)^7$
— $(1 + \frac{1}{8}x)^8$
— $(1 + \frac{1}{9}x)^9$
— $(1 + \frac{1}{10}x)^{10}$

```
> 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
	$1+x+\frac{1}{2}x^2+\frac{1}{6}x^3+\frac{1}{24}x^4+\frac{1}{120}x^5+\frac{1}{720}x^6$
	$1+x+\frac{1}{2}x^2+\frac{1}{6}x^3+\frac{1}{24}x^4+\frac{1}{120}x^5+\frac{1}{720}x^6$
	$1+x+\frac{1}{2}x^2+\frac{1}{6}x^3+\frac{1}{24}x^4+\frac{1}{120}x^5+\frac{1}{720}x^6$
	$1+x+\frac{1}{2}x^2+\frac{1}{6}x^3+\frac{1}{24}x^4+\frac{1}{120}x^5+\frac{1}{720}x^6$
	$1+x+\frac{1}{2}x^2+\frac{1}{6}x^3+\frac{1}{24}x^4+\frac{1}{120}x^5+\frac{1}{720}x^6$

```
> for i from 1 to 15 do
> e[i] := evalf(subs(x=1,h[i]));
> end do;
```

```

 $e_1 := 2.$ 
 $e_2 := 2.250000000$ 
 $e_3 := 2.370370370$ 
 $e_4 := 2.441406250$ 
 $e_5 := 2.488320000$ 
 $e_6 := 2.521626372$ 
 $e_7 := 2.546499697$ 
 $e_8 := 2.565784514$ 
 $e_9 := 2.581174792$ 
```

$$e_{10} := 2.593742460$$

$$e_{11} := 2.604199012$$

$$e_{12} := 2.613035290$$

$$e_{13} := 2.620600888$$

$$e_{14} := 2.627151556$$

$$e_{15} := 2.632878718$$

[>