Zadaci 3

1

```
(%i1) f(x):=log(1+x+x^2);
```

(%o1) $f(x):=\log\left(1+x+x^2\right)$

```
(%i2) r1: taylor(f(x),x,0,2);
```

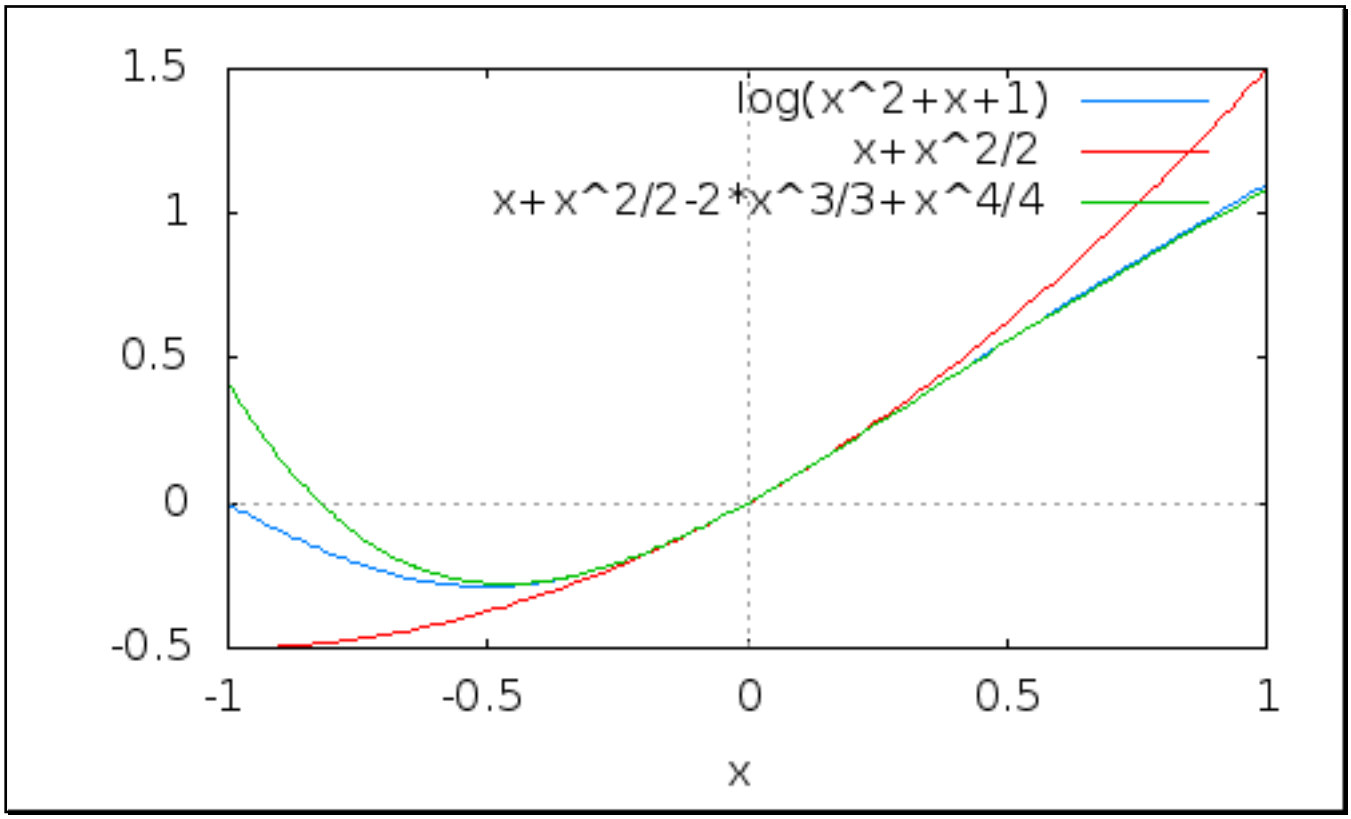
(%o2)/T/ $x+\frac{x^2}{2}+\ldots$

```
(%i3) r2: taylor(f(x),x,0,4);
```

(%o3)/T/ $x+\frac{x^2}{2}-\frac{2\,x^3}{3}+\frac{x^4}{4}+\ldots$

```
(%i4) wxplot2d([f(x),r1,r2],[x,-1,1]);
```

(%t4)



(%o4)

2

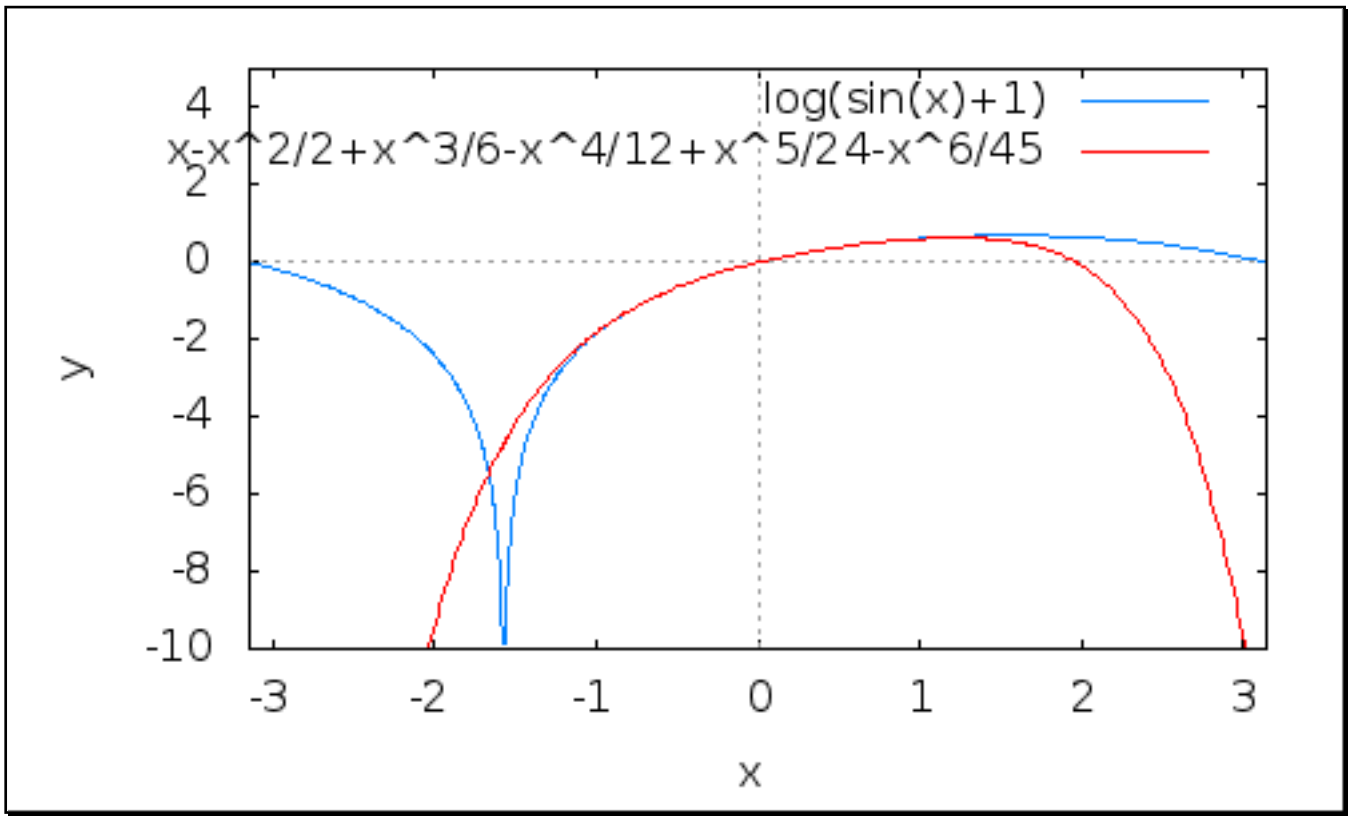
```
(%i5) f(x):=log(1+sin(x));
```

(%o5) $f(x):=\log\left(1+\sin\left(x\right)\right)$

```
(%i6) r: taylor(f(x),x,0,6);
```

$$(\%o6)/T/\quad x-\frac{x^2}{2}+\frac{x^3}{6}-\frac{x^4}{12}+\frac{x^5}{24}-\frac{x^6}{45}+\ldots$$

```
(%i7) wxplot2d([f(x),r],[x,-%pi,%pi],[y,-10,5]);
plot2d: expression evaluates to non-numeric value somewhere in plotting range.
plot2d: some values were clipped.
plot2d: expression evaluates to non-numeric value somewhere in plotting range.
plot2d: some values were clipped.
(%t7)
```




```
(%o7)
```

```
3
```

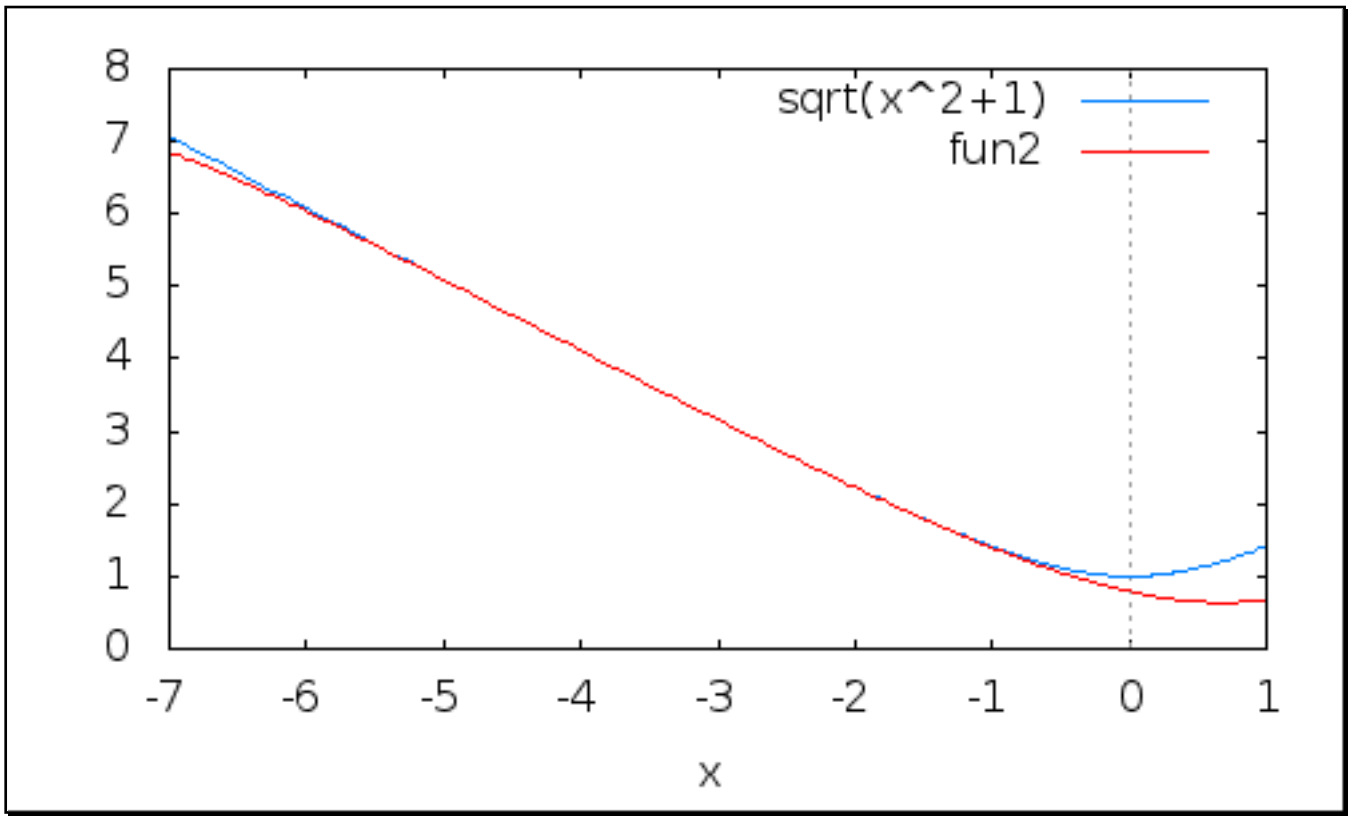
```
(%i8) f(x):=sqrt(x^2+1);
```

$$(\%o8)\quad f(x):=\sqrt{x^2+1}$$

```
(%i9) q: taylor(f(x),x,-3,5);
```

$$(\%o9)/T/\quad \sqrt{10}-\frac{3\sqrt{10}\,(x+3)}{10}+\frac{\sqrt{10}\,(x+3)^2}{200}+\frac{3\sqrt{10}\,(x+3)^3}{2000}+\frac{7\sqrt{10}\,(x+3)^4}{16000}+\frac{99\sqrt{10}\,(x+3)^5}{800000}+\ldots$$

```
(%i10) wxplot2d([f(x),q],[x,-7,1]);
(%t10)
```




```
(%o10)
```

4

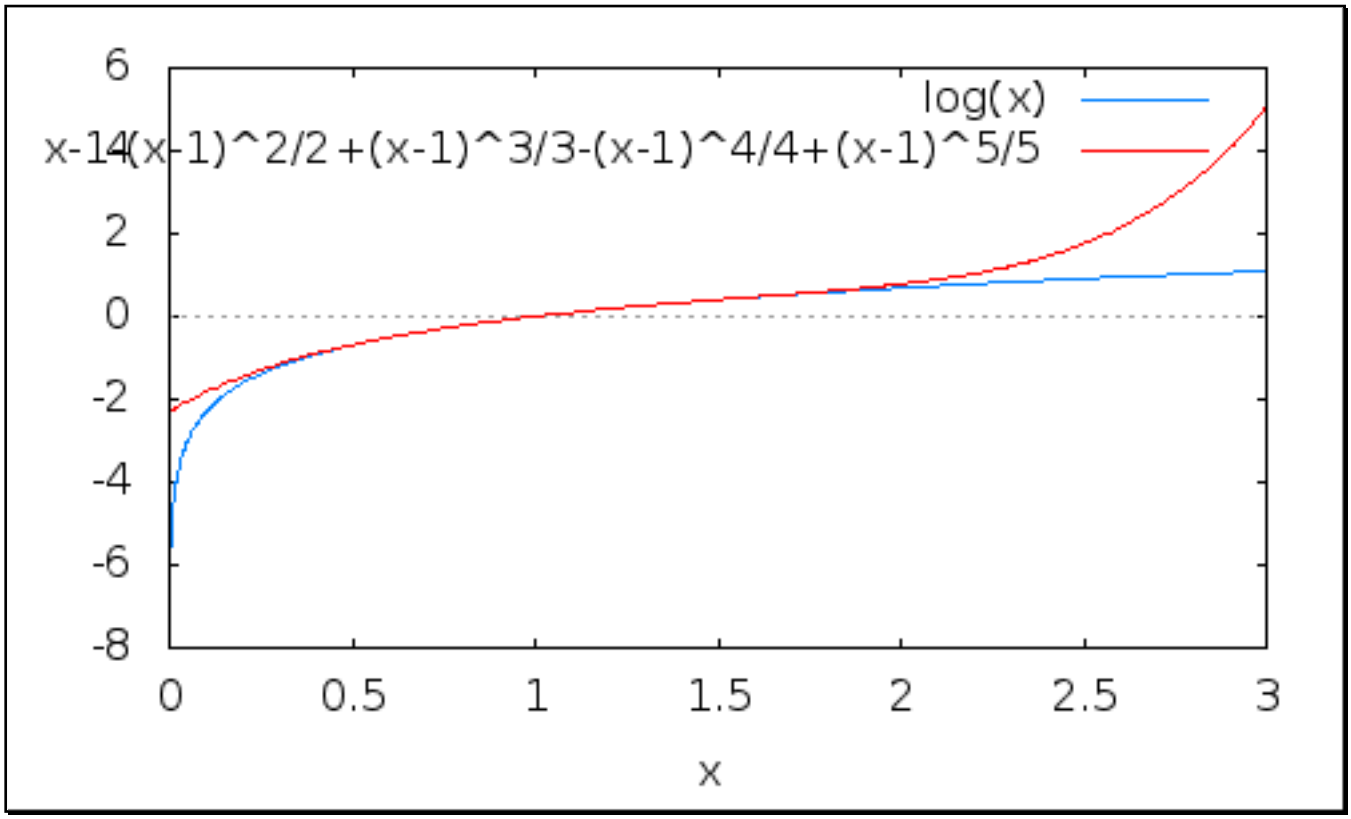
```
(%i11) r: taylor(log(x),x,1,5);
```

(%o11)/T/ $$x-1-\frac{(x-1)^2}{2}+\frac{(x-1)^3}{3}-\frac{(x-1)^4}{4}+\frac{(x-1)^5}{5}+\ldots$$

(%i12) `wxplot2d([log(x),r],[x,0,3]);`

plot2d: expression evaluates to non-numeric value somewhere in plotting range.
plot2d: expression evaluates to non-numeric value somewhere in plotting range.

(%t12)



(%o12)