(%i4)
```
/* Preliminaries */
pi1[n]:=if n<2 then 0 elseif primep(n) then pi1[n-1]+1 else pi1[n-1];
```

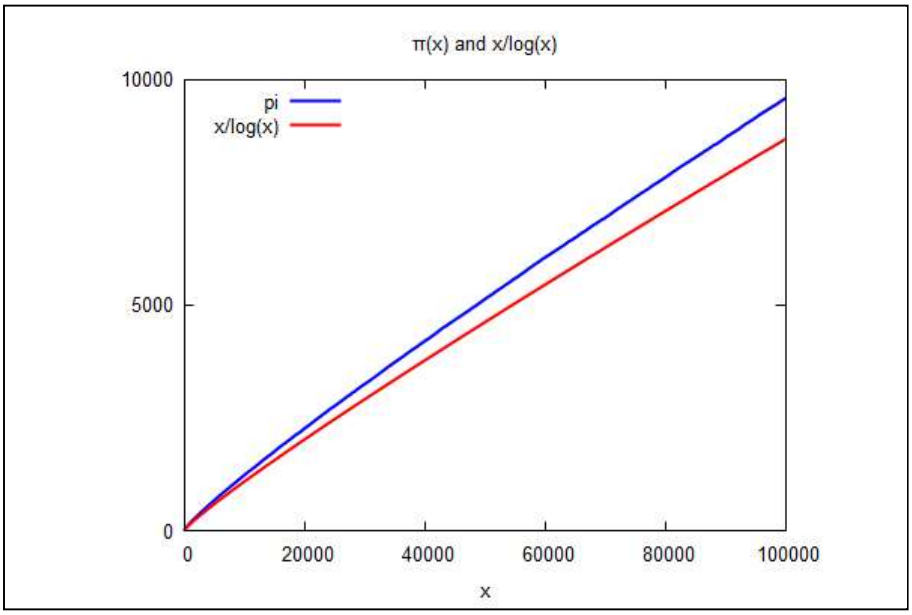
(%o4)
$$pi1_n := \text{if } n < 2 \text{ then } 0 \text{ elseif } primep(n) \text{ then } pi1_{n-1}+1 \text{ else } pi1_{n-1}$$

(%i5)
```
/*Define π(x) = the number of primes less than or equal to x*/
pi(x):=if integerp(x) and primep(x) then pi1[x]-1/2 else pi1[floor(x)];
```

(%o5)
$$pi(x) := \text{if } integerp(x) \text{ and } primep(x) \text{ then } pi1_x - \frac{1}{2} \text{ else } pi1_{floor(x)}$$

(%i7)
```
/* π(x) and x/log(x) */
wxplot2d([pi,x/log(x)],
    [x,%e,100000],
    [style,[lines,2]],
    [xlabel, "x"],
    [xtics,20000],
    [ytics,5000],
    [gnuplot_preamble,"set key top left"],
    [title, "π(x) and x/log(x)"]);
```

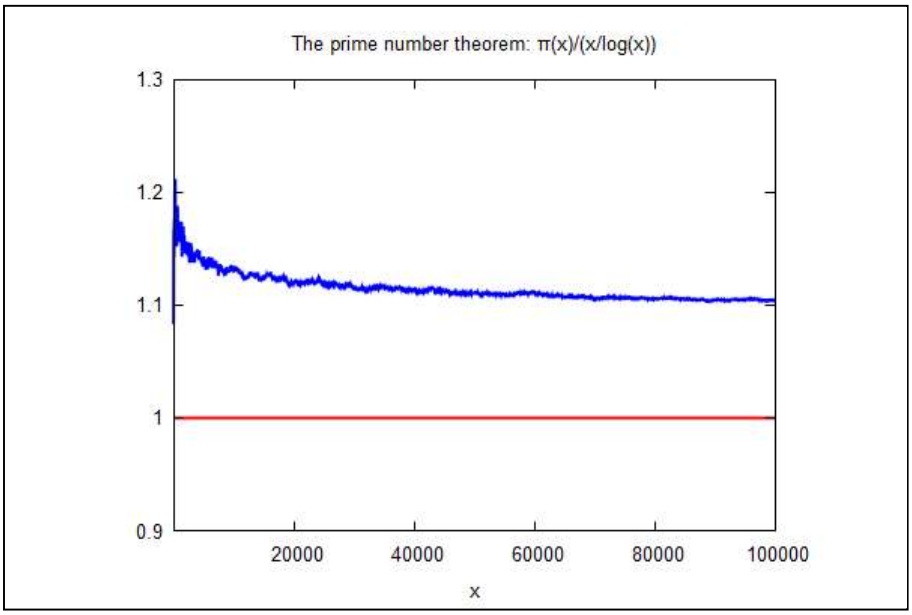
(%t7)



(%o7)

(%i9)
```
/* π(x)/(x/log(x)) */
wxplot2d([pi(x)/(x/log(x)),1],
    [x,15,100000],
    [style,[lines,2]],
    [xlabel, "x"],
    [xtics,20000],
    [ytics,0.1],
    [legend,false],
    [y,0.9,1.3],
    [gnuplot_preamble,"set key top left"],
    [title, "The prime number theorem: π(x)/(x/log(x))"]);
```

(%t9)



(%o9)