```
> restart;
> with(Student[NumericalAnalysis]):
> Digits:=100:
> directMethod:=proc(N,m)
    local s,h,i,t;
    s:=m:
    h:=(t,x)->cos(x)+(t-1)*cos(s):
    for i from 1 to N do
      t:=i/N:
      s:=Newton(h(t,x),x=s);
    end do;
  end proc:

> N:=1:
  while abs(directMethod(N,0.1)-evalf(Pi/2)) > 10^(-7) do
    N:=N+1:
> end do:
  print('N'=N,directMethod(N,0.1));
```

$N = 3,$

$1.57079632679489661923132358744412734793919515131079640567927837680581793341637219153173131881682953 2$ (1)

```
> for N from 1 to 10 do
    print('N'=N,directMethod(N,0.1));
  end do;
```

$N = 1,$

$10.995574287564276296265521541678977926211994951016075388184336847999794405674029944945027477119809 25$

$N = 2,$

$4.71238898038465036946206629099028773052873692455240149459049120409361678589971242876331216545973463 5$

$N = 3,$

$1.57079632679489661923132358744412734793919515131079640567927837680581793341637219153173131881682953 2$

$N = 4,$

$-1.57079632679489661923132169163975154505393994369205417581464224723213399676262359411044923959738131 31$

$N = 5,$

$1.57079632679489446826790864424563661421679718945044272324596286605859007006419871707521567305174908 7$

$N = 6,$

$1.57079632679489661864512886436377863838345652369129483905226555270950026741991563283994696027792190 2$

$N = 7,$

$1.57079632679489661923117956324307260906535152947215982511901120762785096950933299022900009252413794 2$

$N = 8,$

$$
\begin{aligned}
&1.57079632679489661923132166007870422280632274073366504112000668524559984\backslash\\
&7317133767748170085051205 40\\
N &= 9,\\
&1.57079632679489661923132169163320260602959003621625841334548380064867294 0\backslash\\
&5399602226986631123511655 28\\
N &= 10,\\
&1.57079632679489661923132169163975015442284176456534937668470183631432356 1\backslash\\
&8485626528560085934558626 45
\end{aligned}
\tag{2}
$$