Quiz 2

Αγγέλου Αρετή-Χριστίνα

Αεμ:789

1) D

2) A

3) D

4) C

5) C

x2 –R=0

f(x0) = x02 –R

f’(x0) = 2x0

 h= - f(x0) / f’(x0) = - (x02 –R)/2x0

 x1 = x0 + h = x0 – [ (x02 –R)/2x0 ] = (2 x02 - x02 –R)/2 x0= (x02 –R)/2 x0 = $\frac{1}{2}$(x0 – R/x0)

6) C

x2 –4=0

x0=3 ,n=0

f(x0) = x02 –4 = 5

f’(x0) = 2x0 = 6

 h= - f(x0) / f’(x0) = - $\frac{5}{6}$

x1 = x0 + h = 3- $\frac{5}{6}$ = 2,167

7) B

 f’(x) = tan57=1,539

 y-f(x0)= f’(x)(x-x0) => y-5=1,539(x -3) => y=1,539x +0,383

 f(x0)= 1,539 $∙$3 +0,383= 5

 f’(x0)= 1,539

 h= - $\frac{5}{1,539}$ = -3,2488

 x1=x0+h=3-3,2488= -0,2488

8) x3 -4=0

* x0= -2 , n=0 , e= (x1-x0)/x1 = -1

 f(x0)= x03 -4= -12

 f’(x0)=3 x03=12

 h= - $\frac{-12}{12}$ = 1

 x1=x0+h= -2+1= -1

 n=1

 h>e

 e1= (x2-x1)/x2=-0,4925

 f(x1)= x13 -4= -5

 f’(x1)=3 x13=3

 h= - $\frac{-5}{3}$ = 1,666

 x2=x1+h= -1+ 1,666= -0,67

 n=2

 h>e1

 e2= (x3-x2)/x3= 1,2658

 f(x2)= x23 -4= -4,300

 f’(x2)=3 x23=1,3467

 h= - $\frac{-4,300}{1,3467}$ = 3,19

 x3=x2+h = -0,67+ 3,19 = 2,52

 n=3

 h>e2

 e3= (x4-x3)/x4= -0,333

 f(x3)= x33 -4= 12,00

 f’(x3)=3 x33=19.05

 h= - $\frac{12}{19.05}$ = -0,6299

 x4=x3+h =2,52 -0,63= 1,89

 h< e3 end

x3 -4=0

* x0= 5 , n=0 , e= (x1-x0)/x1 = -0,4792

 f(x0)= x03 -4= 121

 f’(x0)=3 x03=75

 h= - $\frac{121}{75}$ = -1,62

 x1=x0+h= 5-1,62= 3,38

 n=1

 h< eend

9) B

10) D

x2 –R=0

f(x0) = x02 –R

f(x1) = x12 –R

h= -f(x1) / [ (f(x1)-f(x0))/(x1-x0)] = (- x12 +R)/( x1+x0)

x2=x1+h= x1+ (- x12 +R)/( x1+x0) = (x0x1+R)/( x1+x0)

11) A

x2 –4=0 , x0=3,x1=4

f(x0) = x02 –4

f(x1) = x12 –4

h= -f(x1) / [ (f(x1)-f(x0))/(x1-x0)] = - $\frac{12}{7}$

 x2=x1+h= 4-$ \frac{12}{7}$= 2,2857

12) B

13) D

sinx=0, x0=$ \frac{π}{3}$,x1=$ \frac{π}{2}$

f(x0) = sinx0=$ \frac{\sqrt{3}}{2}$

f(x1) =sinx1 =1

h= -f(x1) / [ (f(x1)-f(x0))/(x1-x0)] = - $\frac{π}{3(2-\sqrt{3)}}$

 x2=x1+h=$ \frac{π}{2}$- $\frac{π}{3(2-\sqrt{3)}}$