

1-

a)

```
(abs(log2(0.5))*atan(0.79))/(8*exp(3)*62^5)
```

4.5420e-12

b)

```
syms x
```

```
solve(x^3+2X^2)
```

0

0

-2

c)

```
syms x y
```

```
t=x^10-y^10
```

```
factor(t)
```

2-

a)

```
function x=newtonraf(x0,tol,n)
x(1)=x0;
for i=1:n
    x(i+1)=x(i)-f(x(i))/df(x(i));
    if abs(x(i+1)-x(i))<tol
        break
    end
    x(i)=x(i+1);
end
function y=f(x)
y=2*x^2+x-1;
function z=df(x)
z=4*x+1;
```

b),c)

```
approx= newtonraf(0,10^-5,40)
```

```
syms x
```

```
exact=solve(2*x^2+x-1)
```

```
error=abs(exact-approx)
```

3-a),b),c)

```
function p=simpoo(x0,xn,n)
```

```
h=(xn-x0)/n;
```

```
s1=0;
```

```
for i=1:2:n-1
```

```
    x(i)=x0+i*h;
```

```
    s1=s1+f(x(i));
```

```
end
```

```
s2=0;
```

```
for i=2:2:n-1
```

```
    x(i)=x0+i*h;
```

```
    s2=s2+f(x(i));
```

```
end
```

```
p=(h/3)*(f(x0)+f(xn)+4*s1+2*s2);
```

```
function t=f(x)
```

```
t=1/sqrt(x^2-4);
```

```
>> approx=simpoo(3,5,8)
```

```
approx =
```

```
0.6044
```

```
>> exact=vpa(int(1/sqrt(x^2-4),x,3,5))
```

```
exact =
```

```
0.60437558685320418366853903573175
```

```
>> error=abs(exact-approx)
```

```
error =
```

```
0.000018489444223845296902590764866378
```