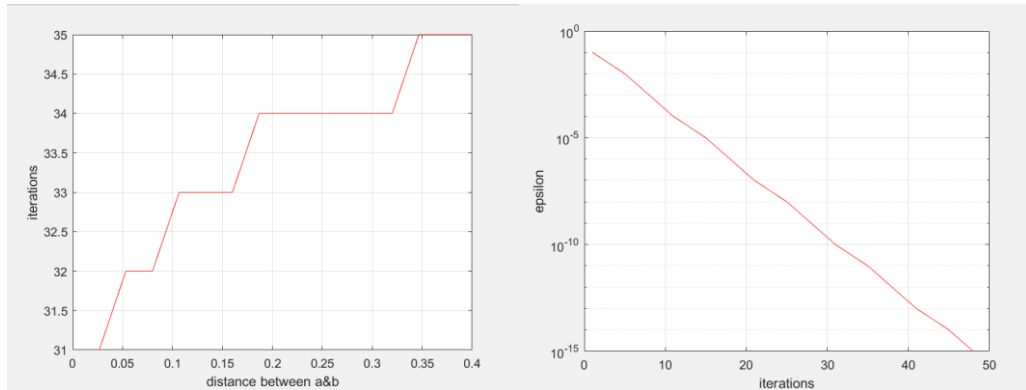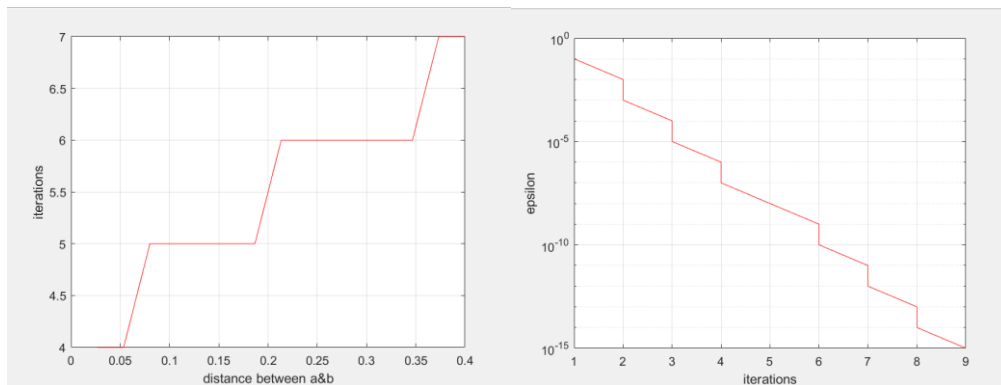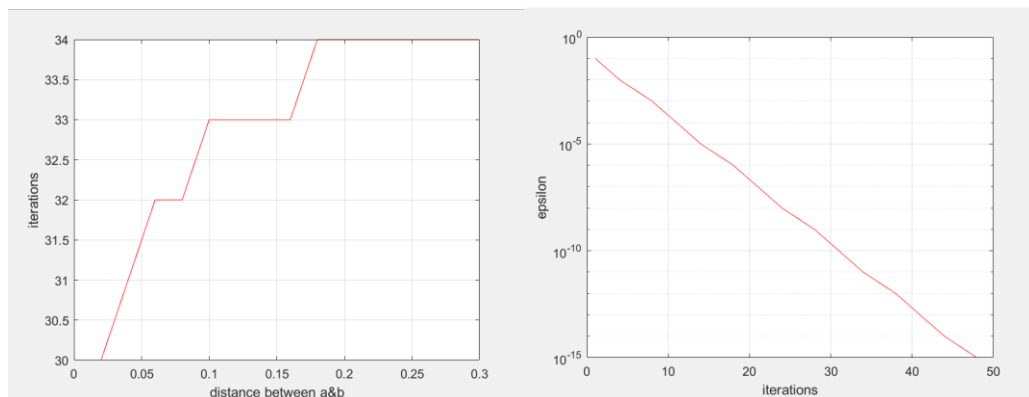Graphics $P(x) = \frac{1}{2}x^4 + 4x^3 - 11x^2 + 2$ bisection method:
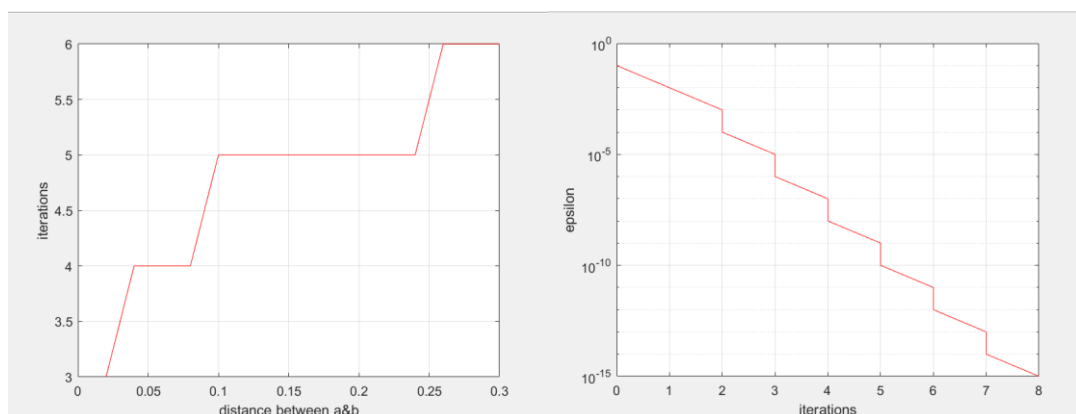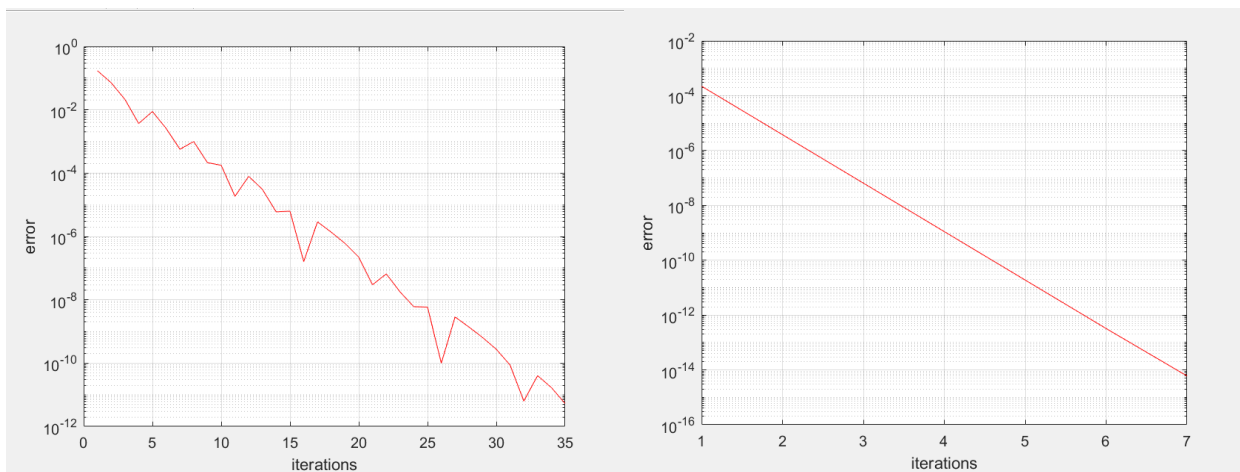

And the method of false position:

Graphics $F(x) = \frac{1}{2}x^2 - \sin(e^x) - 1$ bisection method:
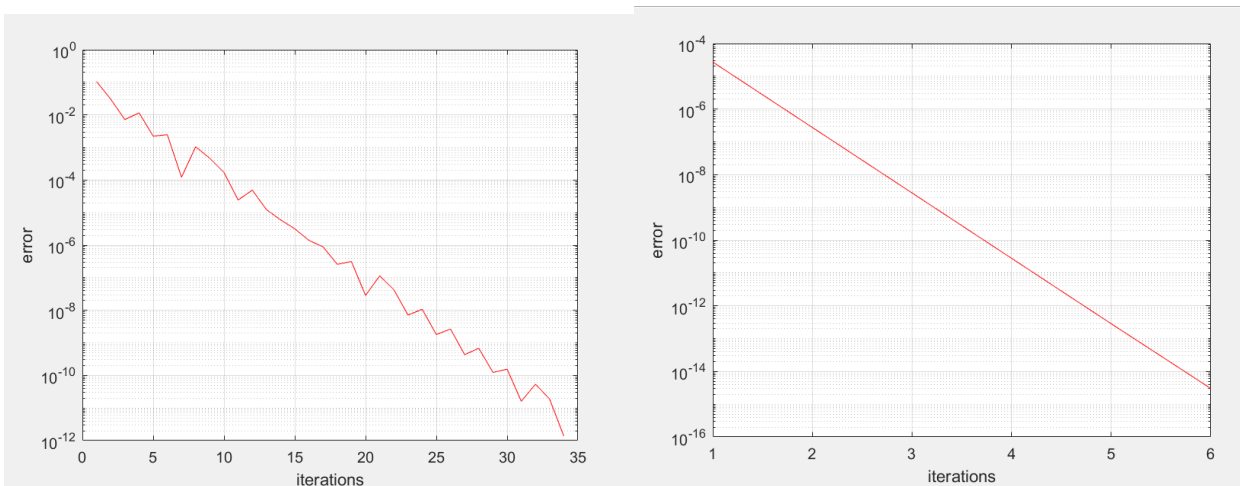

And the method of false position:

The convergence rate for the method of dichotomy and method of the chords for the polynomial $P(x) = \frac{1}{2}x^4 + 4x^3 - 11x^2 + 2$:

And for transcendental equation $F(x) = \frac{1}{2}x^2 - \sin(e^x) - 1$:

```matlab
%ПОСТРОЕНИЕ ПОЛИНОМА
figure
a = -0.5;
b = 0.5;
p = [0.5 4 -11 0 2]
d = linspace(a,b,1000);
POLINOM = polyval(p,d)
hold on
title(y=0.5*x.^4+4*x.^3-11*x.^2+2');
xlabel('x')
ylabel('y')
grid on

%ЗАДАДИМ ТОЧНОСТЬ
e = 0.0001
%МЕТОД ПОЛОВИННОГО ДЕЛЕНИЯ
[Rezult,iterations]=Half(e,p,a,b)
plot(Rezult,0,'ro')
x0 = roots(p)
x0 = x0(x0<-5&x0>-6)

POGRESH_B = x0 - Rezult
```

```matlab
Файл Half.m
function [Rezult,iterations] =
Half(e,p,a,b)
iterations = 0;
while (b - a > e)
    iterations = iterations + 1
    c = a + (b - a) / 2
    FA = polyval(p,a)
    FB = polyval(p,b)
    FC = polyval(p,c)
    if (FA == 0)
        Rezult = a
    end
    if (FB == 0)
        Rezult = b
    end
    if (FC == 0)
        Rezult = c
    end
    if (FC*FA < 0)
        b = c
        Rezult = a
    else
        a = c
        Rezult = b
    end
    line([c,c],[-200,600])
end

end
```

Result: