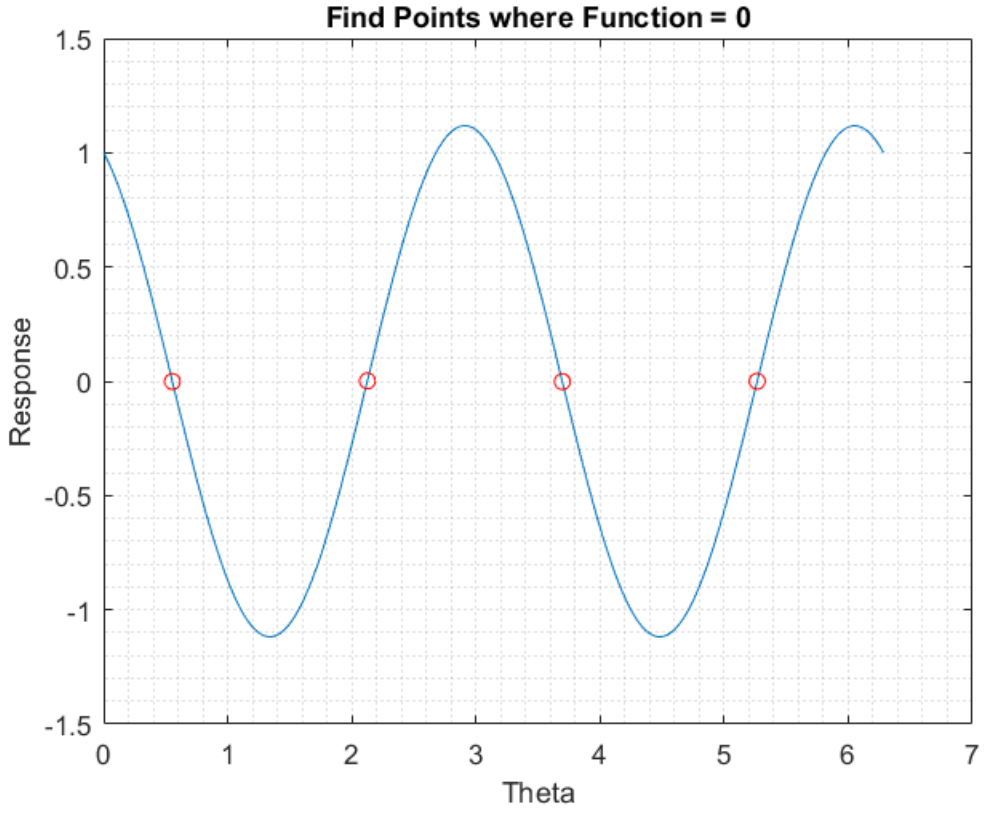
```
clear all
close all
clc

theta=0:.001:2*pi;
for i=1:length(theta)
    m(i)=cos(theta(i));
    n(i)=sin(theta(i));
    value_427(i)=((m(i)^4)+(2*(n(i)^4)))/((2*(n(i)^2))*(m(i)^2));
    value_441(i)=-m(i)*n(i)+m(i)^2-n(i)^2;
end
for i=1:length(theta)
    if value_427(i) == min(value_427)
        min_theta_427=theta(i);
        break
    end
end

min_theta_427

plot(theta, value_441)

for i=1:length(theta)
    if value_441(i)<=0
        theta_0_1st=theta(i);
        value_1=value_441(i);
        index_1=i;
            break
    end

end

for i=index_1+1:length(theta)
    if value_441(i)>=0
        theta_0_2nd=theta(i);
        value_2=value_441(i);
        index_2=i+index_1;
            break
    end

end

for i=index_2+1:length(theta)
    if value_441(i)<=0
        theta_0_3rd=theta(i);
        value_3=value_441(i);
        index_3=i;
            break
    end

end
```

```
for i=index_3+1:length(theta)
    if value_441(i)>=0
        theta_0_4th=theta(i);
        value_4=value_441(i);
            break
    end

end
hold on
plot(theta_0_1st, value_1, 'ro')
plot(theta_0_2nd, value_2, 'ro')
plot(theta_0_3rd, value_3, 'ro')
plot(theta_0_4th, value_4, 'ro')
grid minor
title('Find Points where Function = 0')
xlabel('Theta')
ylabel('Response')
```

```
min_theta_427 =

    5.5840
```



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