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```
clear all;clc
```

Given Data

```
p = 2;
h1 = pi/3;
h2 = pi/6;
x = pi/4;
```

function handles for central formula of O(h^2)

```
g=@(x,h) (cos(x+h) - cos(x-h))/(2*h);
```

Analytical function handles

```
yAnalyticalfun =@(x) -sin(x);
```

solutions

```
derivative_byRichardson = ((2.^p)*g(x,h2) - g(x,h1) )/( (2.^p) -1)
derivative_byanalytical = yAnalyticalfun(x)
```

```
derivative_byRichardson =

   -0.7054


derivative_byanalytical =

   -0.7071
```

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