（1）、

```
Please input the initial value of x:
0.5
Please input the value of eps1:
0.000001
Please input the value of eps2:
0.0001
Please input n:
10
The zeros of the function is 0.567143164965
```

（2）、

```
Please input the initial value of x:
0.5
Please input the value of eps1:
0.000001
Please input the value of eps2:
0.0001
Please input n:
20
The zeros of the function is 0.566605664800
```

问题 3、程序的执行结果如下：

（1）、

$$P_2(x) = (3*x^2)/2 - 1/2$$
$$P_3(x) = (5*x^3)/2 - (3*x)/2$$
$$P_4(x) = (35*x^4)/8 - (15*x^2)/4 + 3/8$$
$$P_5(x) = (63*x^5)/8 - (35*x^3)/4 + (15*x)/8$$
$$P_6(x) = (231*x^6)/16 - (315*x^4)/16 + (105*x^2)/16 - 5/16$$

```
Please input the initial value of x:
0.9
Please input the value of eps1:
0.000001
Please input the value of eps2:
0.0001
Please input n:
10
The zeros of the function is 0.932469514337
```

```
Please input the initial value of x:
0.6
Please input the value of eps1:
0.000001
Please input the value of eps2:
```

```
0.0001
Please input n:
10
The zeros of the function is 0.661209398938
```

```
Please input the initial value of x:
0.2
Please input the value of eps1:
0.000001
Please input the value of eps2:
0.0001
Please input n:
10
The zeros of the function is 0.238619535162
```

```
Please input the initial value of x:
-0.9
Please input the value of eps1:
0.000001
Please input the value of eps2:
0.0001
Please input n:
10
The zeros of the function is -0.932469514341
```

```
Please input the initial value of x:
-0.66
Please input the value of eps1:
0.000001
Please input the value of eps2:
0.0001
Please input n:
10
The zeros of the function is -0.661209386469
```

```
Please input the initial value of x:
-0.2
Please input the value of eps1:
0.000001
Please input the value of eps2:
0.0001
Please input n:
10
```

The zeros of the function is -0.238619535148

同样，（2）、（3）、（4）可以求出函数零点，这里直接给出程序执行的结果：

$$T_2(x)=2*x^2-1$$
$$T_3(x)=4*x^3-3*x$$
$$T_4(x)=8*x^4-8*x^2+1$$
$$T_5(x)=16*x^5-20*x^3+5*x$$
$$T_6(x)=32*x^6-48*x^4+18*x^2-1$$

$T_6(x)=0$ 利用牛顿迭代法求出的结果为：

初始值	-1	-0.8	-0.4	0.4	0.8	1
计算结果	-0.96592583	-0.70710678	-0.25881905	0.25881905	0.70710678	0.96592583

$$L_2(x)=x^2-4*x+2$$
$$L_3(x)=-x^3+9*x^2-18*x+6$$
$$L_4(x)=x^4-16*x^3+72*x^2-96*x+24$$
$$L_5(x)=-x^5+25*x^4-200*x^3+600*x^2-600*x+120$$

$L_6(x)=0$ 利用牛顿迭代法求出的结果为：

初始值	0.2	1.4	3.5	7	12
计算结果	0.26356032	1.41340306	3.59642577	7.08581001	12.64080084

$$H_2(x)=4*x^2-2$$
$$H_3(x)=8*x^3-12*x$$
$$H_4(x)=16*x^4-48*x^2+12$$
$$H_5(x)=32*x^5-160*x^3+120*x$$
$$H_6(x)=64*x^6-480*x^4+720*x^2-120$$

$H_6(x)=0$ 利用牛顿迭代法求出的结果为：

初始值	-2.3	-1.3	-0.4	2.3	1.3	0.4
计算结果	-2.35060497	-1.33584907	-0.43607741	2.35060497	1.33584907	0.43607741

通过与材料中提供的零点的精确值比较可知，运用本程序可以准确地求解出满足精度要求的解。