```
>> %compute problem in Example 5.3
>> % compute r^dsos_1
>> [prob,para] = P_5_3; %(m,d)=(16,4)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using DSOS is
90
Elapsed time is 2.357159 seconds.
>> [prob,para] = P_5_3; %(m,d)=(10,6)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using DSOS is
52
Elapsed time is 5.735436 seconds.
>> [prob,para] = P_5_3; %(m,d)=(20,4)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using DSOS is
112
Elapsed time is 4.341727 seconds.
>> [prob,para] = P_5_3; %(m,d)=(12,6)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using DSOS is
62
Elapsed time is 13.907628 seconds.
>> [prob,para] = P_5_3; %(m,d)=(10,8)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using DSOS is
50.0026
Elapsed time is 86.941283 seconds.
>> [prob,para] = P_5_3; %(m,d)=(12,8)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using DSOS is
60.0243
Elapsed time is 526.473781 seconds.
>>
>> % compute r^sdsos_1
>> [prob,para] = P_5_3; %(m,d)=(16,4)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using SDSOS is
105.4308
Elapsed time is 3.220896 seconds.
>> [prob,para] = P_5_3; %(m,d)=(10,6)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using SDSOS is
56.0527
Elapsed time is 9.869763 seconds.
>> [prob,para] = P_5_3; %(m,d)=(20,4)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using SDSOS is
131.0663
Elapsed time is 6.387494 seconds.
>> [prob,para] = P_5_3; %(m,d)=(12,6)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using SDSOS is
67.405
Elapsed time is 22.387847 seconds.
>> [prob,para] = P_5_3; %(m,d)=(10,8)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using SDSOS is
52.5736
Elapsed time is 168.450208 seconds.
>> [prob,para] = P_5_3; %(m,d)=(12,8)
>> tic; fsippsolve(prob,para,1); toc;
The optimal value  of the 1-th primal SDP relaxation (P_k) using SDSOS is
```

```
63.0883
Elapsed time is 673.560060 seconds.
>>
```