```
Problem type appears to be: con
Time for symbolic processing: 1.6126 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904146100
                                          sum(|constr|)      0.000000001480174281
                                 f(x_k) + sum(|constr|)      3.435021213384320300
                                               f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.281250 sec. Elapsed time: 1.270000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.88239 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904146600
                                          sum(|constr|)      0.000000001480160367
                                 f(x_k) + sum(|constr|)      3.435021213384307000
                                               f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   97
CPU time: 1.187500 sec. Elapsed time: 1.202000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.93533 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904146100
                                          sum(|constr|)      0.000000001480192219
                                 f(x_k) + sum(|constr|)      3.435021213384338500
                                               f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  150
CPU time: 1.109375 sec. Elapsed time: 1.146000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.81885 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480153471
                                f(x_k) + sum(|constr|)     3.435021213384299000
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  198
CPU time: 1.484375 sec. Elapsed time: 1.507000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.8236 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.440128895166487200
                                        sum(|constr|)      0.000000000321592598
                                f(x_k) + sum(|constr|)     3.440128895488079800
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   21 GradEv   19 ConstrEv   19 ConJacEv   19 Iter   18 MinorIter  362
CPU time: 1.375000 sec. Elapsed time: 1.384000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.76902 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.446873578609587000
                                        sum(|constr|)      0.000000000770190161
                                f(x_k) + sum(|constr|)     3.446873579379777100
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
```

```
Optimality conditions satisfied

FuncEv   21 GradEv   19 ConstrEv   19 ConJacEv   19 Iter   18 MinorIter  139
CPU time: 1.375000 sec. Elapsed time: 1.392000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.78094 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904146100
                                        sum(|constr|)      0.000000001480163146
                                f(x_k) + sum(|constr|)     3.435021213384309200
                                              f(x_0)      15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.125000 sec. Elapsed time: 1.155000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.81717 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480166403
                                f(x_k) + sum(|constr|)     3.435021213384311900
                                              f(x_0)      15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.109375 sec. Elapsed time: 1.129000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.79492 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480166815
                                f(x_k) + sum(|constr|)     3.435021213384312300
                                              f(x_0)      15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.062500 sec. Elapsed time: 1.118000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.76454 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                       sum(|constr|)      0.000000001480146019
                               f(x_k) + sum(|constr|)     3.435021213384291900
                                            f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   95
CPU time: 1.140625 sec. Elapsed time: 1.131000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.78166 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                       sum(|constr|)      0.000000001480212408
                               f(x_k) + sum(|constr|)     3.435021213384358100
                                            f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  151
CPU time: 1.093750 sec. Elapsed time: 1.136000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.77306 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                       sum(|constr|)      0.000000001480136590
                               f(x_k) + sum(|constr|)     3.435021213384282100
```

```
                                        f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  145
CPU time: 1.156250 sec. Elapsed time: 1.183000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.76916 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.441140726506104900
                                     sum(|constr|)      0.000000003600120720
                               f(x_k) + sum(|constr|)   3.441140726866116900
                                        f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   21 GradEv   19 ConstrEv   19 ConJacEv   19 Iter   18 MinorIter  182
CPU time: 1.218750 sec. Elapsed time: 1.269000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.77724 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.448010712723357700
                                     sum(|constr|)      0.000000000061264396
                               f(x_k) + sum(|constr|)   3.448010712784622000
                                        f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   21 GradEv   19 ConstrEv   19 ConJacEv   19 Iter   18 MinorIter   98
CPU time: 1.359375 sec. Elapsed time: 1.352000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.8305 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
```

```
                                    sum(|constr|)      0.000000001480148496
                               f(x_k) + sum(|constr|)      3.435021213384294100
                                            f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.125000 sec. Elapsed time: 1.138000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.86181 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                    sum(|constr|)      0.000000001480185535
                               f(x_k) + sum(|constr|)      3.435021213384331400
                                            f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.140625 sec. Elapsed time: 1.156000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.7823 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                    sum(|constr|)      0.000000001480143381
                               f(x_k) + sum(|constr|)      3.435021213384289200
                                            f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.125000 sec. Elapsed time: 1.135000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.78153 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
```

```
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480131761
                                f(x_k) + sum(|constr|)     3.435021213384277200
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  129
CPU time: 1.093750 sec. Elapsed time: 1.121000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.76918 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.441795121096753900
                                        sum(|constr|)      0.000000000124297322
                                f(x_k) + sum(|constr|)     3.441795121221051400
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   61 GradEv   59 ConstrEv   59 ConJacEv   59 Iter   57 MinorIter  344
CPU time: 3.781250 sec. Elapsed time: 3.854000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.78186 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480227470
                                f(x_k) + sum(|constr|)     3.435021213384373200
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  163
CPU time: 1.125000 sec. Elapsed time: 1.159000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.77566 seconds
Starting numeric solver
```

```
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.439162013758912700
                                        sum(|constr|)      0.000000000303434005
                                f(x_k) + sum(|constr|)     3.439162014062346900
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  117
CPU time: 1.203125 sec. Elapsed time: 1.219000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.7831 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.436116521122743400
                                        sum(|constr|)      0.000000001290310542
                                f(x_k) + sum(|constr|)     3.436116522413053900
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   18 GradEv   16 ConstrEv   16 ConJacEv   16 Iter   15 MinorIter  142
CPU time: 1.046875 sec. Elapsed time: 1.083000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.77179 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904144800
                                        sum(|constr|)      0.000000001480086011
                                f(x_k) + sum(|constr|)     3.435021213384230600
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  127
CPU time: 1.187500 sec. Elapsed time: 1.193000 sec.
Problem type appears to be: con
```

```
Time for symbolic processing: 0.76153 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480139560
                                f(x_k) + sum(|constr|)     3.435021213384285200
                                              f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   73
CPU time: 1.109375 sec. Elapsed time: 1.116000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.75962 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904146100
                                        sum(|constr|)      0.000000001480241824
                                f(x_k) + sum(|constr|)     3.435021213384387800
                                              f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.156250 sec. Elapsed time: 1.135000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.77604 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904144800
                                        sum(|constr|)      0.000000001480152699
                                f(x_k) + sum(|constr|)     3.435021213384297700
                                              f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
```

```
CPU time: 1.125000 sec. Elapsed time: 1.121000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.77853 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480186742
                                f(x_k) + sum(|constr|)     3.435021213384332300
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.187500 sec. Elapsed time: 1.157000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.75674 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904146100
                                        sum(|constr|)      0.000000001480182968
                                f(x_k) + sum(|constr|)     3.435021213384329200
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.093750 sec. Elapsed time: 1.114000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.78614 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145200
                                        sum(|constr|)      0.000000001480191797
                                f(x_k) + sum(|constr|)     3.435021213384337200
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied
```

```
FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  116
CPU time: 1.156250 sec. Elapsed time: 1.174000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.78533 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                        sum(|constr|)      0.000000001480079299
                                f(x_k) + sum(|constr|)     3.435021213384224800
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  176
CPU time: 1.171875 sec. Elapsed time: 1.164000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.76021 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435762829921589200
                                        sum(|constr|)      0.000000000072012298
                                f(x_k) + sum(|constr|)     3.435762829993601400
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   22 GradEv   20 ConstrEv   20 ConJacEv   20 Iter   19 MinorIter  149
CPU time: 1.296875 sec. Elapsed time: 1.319000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.7821 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.448153529136041200
                                        sum(|constr|)      0.000000001249936092
                                f(x_k) + sum(|constr|)     3.448153530385977400
                                                f(x_0)    15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
```

```
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv  354 GradEv  352 ConstrEv  352 ConJacEv  352 Iter  125 MinorIter 5785
CPU time: 16.140625 sec. Elapsed time: 16.146000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.99233 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       4.416510475597407400
                                        sum(|constr|)      0.000000012934650784
                                f(x_k) + sum(|constr|)     4.416510488532058100
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   40 GradEv   38 ConstrEv   38 ConJacEv   38 Iter   37 MinorIter  265
CPU time: 3.562500 sec. Elapsed time: 3.575000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.98706 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211884191000
                                        sum(|constr|)      0.000000000031032204
                                f(x_k) + sum(|constr|)     3.435021211915223000
                                             f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   20 GradEv   18 ConstrEv   18 ConJacEv   18 Iter   17 MinorIter  200
CPU time: 1.593750 sec. Elapsed time: 1.628000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.97162 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.443478051051706700
                                        sum(|constr|)      0.000000000203044907
                                f(x_k) + sum(|constr|)     3.443478051254751400
                                             f(x_0)     15.000000000000000000
```

```
Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   21 GradEv   19 ConstrEv   19 ConJacEv   19 Iter   18 MinorIter  169
CPU time: 1.781250 sec. Elapsed time: 1.783000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.98878 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.557302298456920300
                                        sum(|constr|)      0.000000000025746419
                                f(x_k) + sum(|constr|)     3.557302298482666800
                                              f(x_0)      15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv  124 GradEv  122 ConstrEv  122 ConJacEv  122 Iter  102 MinorIter 2464
CPU time: 11.265625 sec. Elapsed time: 11.252000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.0009 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211896570400
                                        sum(|constr|)      0.000000001284586855
                                f(x_k) + sum(|constr|)     3.435021213181157100
                                              f(x_0)      15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter  152
CPU time: 1.562500 sec. Elapsed time: 1.550000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.99447 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211888977800
                                        sum(|constr|)      0.000000000039073996
```

```
                            f(x_k) + sum(|constr|)      3.435021211928051900
                                              f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   20 GradEv   18 ConstrEv   18 ConJacEv   18 Iter   17 MinorIter  716
CPU time: 2.078125 sec. Elapsed time: 2.090000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.98017 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145200
                                       sum(|constr|)      0.000000001480291422
                            f(x_k) + sum(|constr|)      3.435021213384436700
                                              f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   72
CPU time: 1.500000 sec. Elapsed time: 1.478000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.0454 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145700
                                       sum(|constr|)      0.000000001480297148
                            f(x_k) + sum(|constr|)      3.435021213384442900
                                              f(x_0)     15.000000000000000000

Solver: snopt.  EXIT=0.  INFORM=1.
SNOPT 7.2-12 NLP code
Optimality conditions satisfied

FuncEv   19 GradEv   17 ConstrEv   17 ConJacEv   17 Iter   16 MinorIter   71
CPU time: 1.453125 sec. Elapsed time: 1.476000 sec.
Trial>>
```