```
Problem type appears to be: con
Time for symbolic processing: 2.0192 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: 1.390625 sec. Elapsed time: 1.336000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.2546 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|)      0.000000001480133181
                                 f(x_k) + sum(|constr|)      3.435021213384278600
                                               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: 1.218750 sec. Elapsed time: 1.237000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.93637 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|)      0.000000001480175764
                                 f(x_k) + sum(|constr|)      3.435021213384321600
                                               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: 1.234375 sec. Elapsed time: 1.239000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.93017 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|)      0.000000001480157332
                                f(x_k) + sum(|constr|)     3.435021213384303400
                                             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: 1.250000 sec. Elapsed time: 1.270000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.98852 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|)      0.000000001480158528
                                f(x_k) + sum(|constr|)     3.435021213384305200
                                             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: 1.265625 sec. Elapsed time: 1.321000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.97677 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|)      0.000000001480180375
                                f(x_k) + sum(|constr|)     3.435021213384326100
                                             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: 1.234375 sec. Elapsed time: 1.263000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.91152 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: 1.218750 sec. Elapsed time: 1.231000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.919 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: 1.281250 sec. Elapsed time: 1.299000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.91242 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: 1.296875 sec. Elapsed time: 1.288000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.90399 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|)      0.000000001480198831
                                f(x_k) + sum(|constr|)     3.435021213384344300
                                             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: 1.250000 sec. Elapsed time: 1.245000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.88238 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|)      0.000000001480223233
                                f(x_k) + sum(|constr|)     3.435021213384369200
                                             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   81
CPU time: 1.281250 sec. Elapsed time: 1.288000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.90649 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.441960245980490100
                                        sum(|constr|)      0.000000000399565029
                                f(x_k) + sum(|constr|)     3.441960246380054900
```

```
                                        f(x_0)     15.000000000000000

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  169
CPU time: 1.312500 sec. Elapsed time: 1.365000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.88422 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.438310325729640100
                                     sum(|constr|)      0.000000000813150958
                               f(x_k) + sum(|constr|)   3.438310326542791000
                                        f(x_0)     15.000000000000000

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  193
CPU time: 1.468750 sec. Elapsed time: 1.475000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.90441 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.523897978047856800
                                     sum(|constr|)      0.000000000008518152
                               f(x_k) + sum(|constr|)   3.523897978056374800
                                        f(x_0)     15.000000000000000

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

FuncEv  108 GradEv  106 ConstrEv  106 ConJacEv  106 Iter   96 MinorIter 2975
CPU time: 9.484375 sec. Elapsed time: 9.453000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.86545 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211889063500
```

```
                                    sum(|constr|)      0.000000001370873578
                               f(x_k) + sum(|constr|)      3.435021213259937100
                                            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  405
CPU time: 1.546875 sec. Elapsed time: 1.550000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.89939 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|)      0.000000001480213720
                               f(x_k) + sum(|constr|)      3.435021213384358500
                                            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  196
CPU time: 1.281250 sec. Elapsed time: 1.299000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.87129 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|)      0.000000001480163659
                               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  168
CPU time: 1.265625 sec. Elapsed time: 1.332000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.86684 seconds
Starting numeric solver
===== * * * ============================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
```

```
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.474927253744156000
                                        sum(|constr|)      0.000000000048541761
                                f(x_k) + sum(|constr|)     3.474927253792697600
                                             f(x_0)     15.000000000000000000

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

FuncEv  100 GradEv   98 ConstrEv   98 ConJacEv   98 Iter   95 MinorIter 1819
CPU time: 8.109375 sec. Elapsed time: 8.132000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.8873 seconds
Starting numeric solver
===== * * * ============================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211901760500
                                        sum(|constr|)      0.000000001132247777
                                f(x_k) + sum(|constr|)     3.435021213034008100
                                             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  107
CPU time: 1.265625 sec. Elapsed time: 1.303000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.86325 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|)      0.000000001480158776
                                f(x_k) + sum(|constr|)     3.435021213384304300
                                             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: 1.193000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.87689 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|)      0.000000001480145285
                                f(x_k) + sum(|constr|)     3.435021213384291000
                                              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: 1.203125 sec. Elapsed time: 1.210000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.8467 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|)      0.000000001480115209
                                f(x_k) + sum(|constr|)     3.435021213384261300
                                              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: 1.171875 sec. Elapsed time: 1.231000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.85685 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|)      0.000000001480214334
                                f(x_k) + sum(|constr|)     3.435021213384359000
                                              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: 1.203125 sec. Elapsed time: 1.195000 sec.
Problem type appears to be: con
```

```
Time for symbolic processing: 0.86051 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.438090023570847400
                                        sum(|constr|)      0.000000000147625854
                                f(x_k) + sum(|constr|)     3.438090023718473300
                                              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  236
CPU time: 1.468750 sec. Elapsed time: 1.484000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.87776 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.465256016827297900
                                        sum(|constr|)      0.000000000005675366
                                f(x_k) + sum(|constr|)     3.465256016832973400
                                              f(x_0)     15.000000000000000000

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

FuncEv   93 GradEv   91 ConstrEv   91 ConJacEv   91 Iter   80 MinorIter 3929
CPU time: 9.500000 sec. Elapsed time: 9.498000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.86254 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211886152100
                                        sum(|constr|)      0.000000000060932307
                                f(x_k) + sum(|constr|)     3.435021211947084200
                                              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  223
```

```
CPU time: 1.484375 sec. Elapsed time: 1.520000 sec.
Problem type appears to be: con
Time for symbolic processing: 0.8971 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.470042440705211300
                                        sum(|constr|)      0.000000000001415972
                                f(x_k) + sum(|constr|)     3.470042440706627000
                                                f(x_0)    15.000000000000000000

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

FuncEv  122 GradEv  120 ConstrEv  120 ConJacEv  120 Iter  113 MinorIter 2267
CPU time: 11.140625 sec. Elapsed time: 11.572000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.093 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211901496200
                                        sum(|constr|)      0.000000001484144337
                                f(x_k) + sum(|constr|)     3.435021213385640600
                                                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   85
CPU time: 1.500000 sec. Elapsed time: 1.594000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.3517 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.442576550679897100
                                        sum(|constr|)      0.000000000385988335
                                f(x_k) + sum(|constr|)     3.442576551065885200
                                                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  620
CPU time: 1.687500 sec. Elapsed time: 1.692000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.0785 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.627222790281205500
                                        sum(|constr|)      0.000000389948151221
                                f(x_k) + sum(|constr|)     3.627223180229356600
                                             f(x_0)     15.000000000000000000

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

FuncEv   14 GradEv   12 ConstrEv   12 ConJacEv   12 Iter   11 MinorIter  129
CPU time: 1.312500 sec. Elapsed time: 1.296000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.1888 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.451125833717734200
                                        sum(|constr|)      0.000000000012669411
                                f(x_k) + sum(|constr|)     3.451125833730403600
                                             f(x_0)     15.000000000000000000

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

FuncEv  143 GradEv  141 ConstrEv  141 ConJacEv  141 Iter  124 MinorIter 3007
CPU time: 12.703125 sec. Elapsed time: 13.552000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.1277 seconds
Starting numeric solver
===== * * * ========================================================================== * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.476645426315291500
                                        sum(|constr|)      0.000000000083503182
                                f(x_k) + sum(|constr|)     3.476645426398794500
                                             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  191
CPU time: 1.500000 sec. Elapsed time: 1.606000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.1511 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.514781670788634600
                                        sum(|constr|)      0.000000002481628063
                                f(x_k) + sum(|constr|)     3.514781673270262800
                                             f(x_0)     15.000000000000000000

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

FuncEv  654 GradEv  652 ConstrEv  652 ConJacEv  652 Iter  168 MinorIter 4958
CPU time: 29.281250 sec. Elapsed time: 32.382000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.3307 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211902532300
                                        sum(|constr|)      0.000000001475841099
                                f(x_k) + sum(|constr|)     3.435021213378373500
                                             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  583
CPU time: 2.406250 sec. Elapsed time: 2.702000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.1353 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|)      0.000000001480183261
                                f(x_k) + sum(|constr|)     3.435021213384328300
                                             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  109
CPU time: 1.437500 sec. Elapsed time: 1.535000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.2276 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|)      0.000000001480065309
                                f(x_k) + sum(|constr|)     3.435021213384210600
                                              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: 1.522000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.169 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|)      0.000000001480162392
                                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   71
CPU time: 1.531250 sec. Elapsed time: 1.545000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.7831 seconds
Starting numeric solver
===== * * * ========================================================================= * * *
TOMLAB - Tomlab user Demo license  999100. Valid to 2016-05-09
================================================================================
Problem: ---  1: Optimal Robot Path Planning    f_k       3.435021211904145200
                                        sum(|constr|)      0.000000001480234034
```

```
                              f(x_k) + sum(|constr|)      3.435021213384379400
                                             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: 1.718750 sec. Elapsed time: 1.869000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.2272 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|)      0.000000001480377570
                              f(x_k) + sum(|constr|)      3.435021213384523300
                                             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: 1.734375 sec. Elapsed time: 2.007000 sec.
Problem type appears to be: con
Time for symbolic processing: 1.4453 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: 1.625000 sec. Elapsed time: 1.718000 sec.
Trial>>
```