

# Package ‘ROI.plugin.quadprog’

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**Version** 1.0-1

**Title** 'quadprog' Plug-in for the 'R' Optimization Infrastructure

**Description** Enhances the R Optimization Infrastructure ('ROI') package by registering the 'quadprog' solver. It allows for solving quadratic programming (QP) problems.

**Imports** methods, quadprog, ROI (>= 0.3-0), slam

**License** GPL-3

**URL** <http://roi.r-forge.r-project.org/>,  
<https://r-forge.r-project.org/projects/roi/>

**NeedsCompilation** no

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**Repository** CRAN

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Example-1	<i>Quadratic Problem 1</i>
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## Description

$$\begin{aligned} & \text{maximize } x_1^2 + x_2^2 + x_3^2 - 5x_2 \\ & \text{subject to :} \\ & -4x_1 - 3x_2 + \geq -8 \end{aligned}$$

$$2x_1 + x_2 + x_3 \geq 2$$

$$-2x_2 + x_3 \geq 0$$

$$x_1, x_2, x_3 \geq 0$$

### Examples

```
require("ROI")
A <- cbind(c(-4, -3, 0),
          c( 2,  1, 0),
          c( 0, -2, 1))
x <- OP(Q_objective(diag(3), L = c(0, -5, 0)),
       L_constraint(L = t(A),
                   dir = rep(">=", 3),
                   rhs = c(-8, 2, 0)))

opt <- ROI_solve(x, solver="quadprog")
opt
## Optimal solution found.
## The objective value is: -2.380952e+00
solution(opt)
## [1] 0.4761905 1.0476190 2.0952381
```

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