

## MITx: 15.053x Optimization Methods in Business Analytics

■ Bookmarks

- General Information
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#### Lecture 1

Lecture questions due Sep 13, 2016 at 19:30 IST

#### Recitation

#### **Problem Set 1**

Homework due Sep 13, 2016 at 19:30 IST

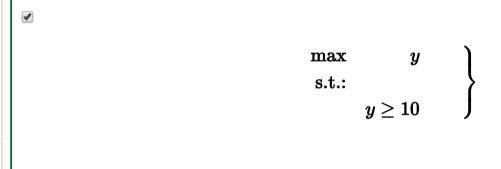
Week 1 > Lecture 1 > Optimization Paradigm Exercise

## ■ Bookmark

# Nonlinear Optimization

(1/1 point)

Which of the following is a non-linear program? (select all that apply)



$$egin{array}{c} \max & 2+2y^2 \ ext{s.t.:} \ & xy=5 \end{array} 
ight.$$

 $egin{array}{ll} \max & 3 + sin(2y) \ & ext{s.t.:} \ & y \leq \pi \end{array}$  $egin{array}{ll} \max & log(5x) + y \ & ext{s.t.:} \ & |y| \leq 10 \end{array}$ 5x $\mathbf{max}$ s.t.:  $x \leq 10$  $x \geq 10$ 



none of the above



## **EXPLANATION**

## Solution

All of the above are acceptable non-linear programs because non-linear programs:

- Can have strict inequalities.
- Can have non linear terms and any type of constraint is permitted.
- Linear programs are special cases of non-linear programs.

You have used 1 of 1 submissions

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