

### MITx: 15.053x Optimization Methods in Business Analytics

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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

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# Minimum Resources

(1/1 point)

Suppose we have a constraint that creates a lower bound  $q_i$  on the amount of resource i used. The other notation is given next.

- S: Set of products
- **R**: Set of resources
- $r_i$ : Amount of resource i available
- $x_i$ : Amount of product j for  $j \in S$
- ullet  $a_{ij}$ : Amount of resource i used to make 1 unit of product j
- $p_j$ : Profit of one unit of j

Which of the following represents the constraint?

 $igcup_{j \in S} a_{ij} x_j \geq r_i$ 

 $\bigcirc \sum_{j \in R} a_{ij} x_j \geq q_i$ 

- $igcup_{j \in S} a_{ij} x_j \leq q_i$
- $igcup_{j \in S} a_{ij} x_j \leq r_i$
- $ullet \sum_{j \in S} a_{ij} x_j \geq q_i$

# **EXPLANATION**

## Solution

The correct answer is:  $\sum_{j \in S} a_{ij} x_j \geq q_i$ 

A lower bound requires that the amount of Resource i that is used is at least  $q_i$ .

You have used 1 of 1 submissions

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