

# MITx: 15.053x Optimization Methods in Business Analytics

Heli

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### Lecture

Lecture questions due Oct 11, 2016 at 19:30 IST

### Recitation

### Problem Set 5

Homework 5 due Oct 11, 2016 at 19:30 IST

# Week 5 > Lecture > Geometry Exercise

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# PART A

(1/1 point)

The objective function is " 3R + 2G." Suppose that the objective function is changed to 3.001R + 2.001G. Which of the following is true:

- The optimal solution stays the same.
- The optimal objective value stays the same
- The optimal objective value decreases

# **EXPLANATION**

# Solution

The slope of the isocost line changes just a little bit. But the optimal solution stays the same.

You have used 1 of 2 submissions

# PART B

(1/1 point)

The first constraint is  $R+G \leq 8$ . Suppose it is changed to  $R+G \leq 7.9$ . Which of the following is true:

- The optimal solution stays the same.
- The optimal objective value stays the same
- The optimal objective value decreases

# **EXPLANATION**

# Solution.

The optimal objective value decreases. The optimal solution for the revised problem occurs when R=5 and R+G=7.9. That is, R=5 and G=2.9. And Z=3R+2G=20.8.

You have used 1 of 2 submissions

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