

# Integral infeasibility and testing total dual integrality

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# Structure

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- 2 Integral Infeasibility
- 3 Testing for total dual integrality
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Sebastian  
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Motivation

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# Example

# Example

- 1 Item 1:  
 $\mathcal{O}(\log(n))$  explanation

# Example

- ① Item 1:  
 $\mathcal{O}(\log(n))$  explanation
- ② Item 2

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# Red-Black Tree (RB Tree) Properties

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## Red-Black Tree (RB Tree) Properties

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## Red-Black Tree (RB Tree) Properties

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## Red-Black Tree (RB Tree) Properties

① 1

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④ 4

⑤ 5

# Example

## Motivation

## Integral Infeasibility

## Testing for total dual integrality

## Feedback Sets

1. Every node is either red or black.
2. The root is black.
3. Every leaf (NIL) is black.
4. If a node is red, then both its children are black.
5. For each node, all simple paths from the node to descendant leaves contain the same number of black nodes.

Figure: Example Image

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