

The House of Santa Claus

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1 Basics

Definition 1.1 (House of Santa Claus). The *House of Santa Claus* is the graph (V, E) , defined as follows:

$$V := \{1, \dots, 5\}$$

$$E := \{\{1, 2\}, \{1, 5\}, \{2, 3\}, \{2, 4\}, \{2, 5\}, \{3, 4\}, \{3, 5\}, \{4, 5\}\}$$

One can illustrate the House of Santa Claus as in Figure 1; more information on *TikZ* can be found in the documentation [14].

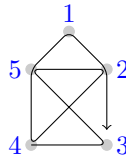


Figure 1: House of Santa Claus

2 Properties of the House of Santa Claus

Theorem 2.1 (House of Santa Claus). *The House of Santa Claus is not complete.*

Proof. We use the notation from Definition 1.1. The House of Santa Claus is not a complete graph because the edge $\{1, 3\}$ is not contained in the House of Santa Claus. \square

3 Examples

Example 3.1.

- Here is an example
- ... and another one
- ... and another one

Exercise 3.2. Please do not forget to insert a few exercises – so that the participants can test their understanding of the topic.

References

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