



## 6. Tall towers

Team Nitro

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# 6. Tall towers

Statement of the problem:

A tower is built by stacking rectangular bricks on top of each other. Some people argue that the maximum height of the tower is limited by the human skill to place the bricks gently; others may say that the limiting factor is non-perfect shape of the bricks. Perform experiments to outline the factors that limit the maximum height of such a tower.

# Theory

## Pros:

- +good theoretical model and physical explanation of the phenomenon
- +explained what center of mass is
- + enumerated several parameters regarding humans that can affect the experiment

Overall:

Above average

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## Cons:

- did not explain why does a tower fall when the center of mass falls outside the base area

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# Experiment

## Pros:

- + studied the human factor comparative to
- + studied how the age, gender and autism disorder of the builders can affect the maximum height of the tower through valid experiments
- + had valid results and compared them in graphics

Overall:

Average

## Cons:

- did not propose a method to eliminate the human factor
- did not study how the maximum height depends on the inclination angle of the surface base;
- did not study if the height of the tower is influenced by the gender on the children of 3 years
- did not vary the material of the bricks;
- did not study if the base surfaces are horizontal

# Conclusions

## Pros:

- + valid conclusions about the human factor
- + good charts showing the differences in the experiments

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Overall:

Average

## Cons:

- no clear maximum height, depending on the parameters
- no clear results regarding autism

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# Discussion topics

- What experimental method would you propose to eliminate the human factor?
- Why does the tower fall when the center of mass falls outside the base area? (theoretical question)
- How do the different types of autism influence the construction?
- What are the symptoms of mentioned autism?



# DISCUSSION