Technical riddles

A collection of technical riddles with answers.

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Laurens van Lieshout

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Introduction
In this book, technical riddles with their answers are presented.

Preface
As the manager of an engineering department I was responsible for hiring engineers. Selecting new engineers was not an easy task and it was important to find someone who would fit into the existing team. Today, more than ever, design and engineering is a team effort. As such the new employer must be able to contribute to the team effort. These personality traits are all related to the so-called 'soft skills'. Normally the human resources department has done the first evaluation on these soft skills. In the so-called second round the expert knowledge was tested. During these tests I used the technical riddles to test the knowledge of the candidate. Also during these tests I evaluated the soft skills of the candidate. If you are good at solving the technical riddle but cannot communicate ….
For the reader who is undergoing a job interview, don't worry if you don't know the answer. Your argument and rationale is more important. Think out loud, voice your logic and don't be afraid to admit defeat.
For the reader who is planning to be a job interviewer, keep in mind that the candidate is nervous.

Google has evaluated their jobs interviews. The outcome of this study was nobody was good in selecting the right people for the job. Only one that was capable of attracting the right people. He was a specialist in his discipline.
Years ago, we already conducted a study to determine if someone at Google was good at recruiting people. We studied tens of thousands of job interviews, we looked at everyone who led the interviews, how much the candidate scored during the

conversation and, if assumed, how will the new workforce perform. We did not find any connection, According to Laszlo Bock (ISBN 9026330774).

The weakest link in every technological chain is and remains human.
These and other quotes on the internet indicate the complexity of selecting the right person for the job. Therefore my advice is to use only open ended questions to allow flexibility in answering a question about a specific topic. Do not give your applicant any brain teasers. They only give the asker a good feeling but do not offer anything at all. Better is to form hypothetical questions. For example, ask your job applicant how to address a specific problem in his or her field. These technical riddles may be of help in asking hypothetical questions. On the other end, it can also be counterproductive if you do not understand the technical riddle.
For the reader who is interested in solving the riddle, have fun.
Because I do not own all knowledge myself, I'm open for suggestions or corrections.
On the internet only the riddle without the answers is published. In this publication information is added to buy the answers (this document).
From my own experience I know that finding the answers should not be too easy. (The degree of enjoyment is proportional to the elapsed time.)

Laurens van Lieshout
First publication was in 2018. *(ISBN 9789463672887)*

After the publication I received many responses. Also I received additional information from some riddles. These

have been added in this updated edition. Also a few new riddles have been added.
In the linkedin group ‘Technical riddles’ you will find like-minded puzzle solvers. Some of the here mentioned riddles are discussed in this group.

I also hope to receive many responses again.
Hopefully you will enjoy these riddles.

Laurens van Lieshout
2021

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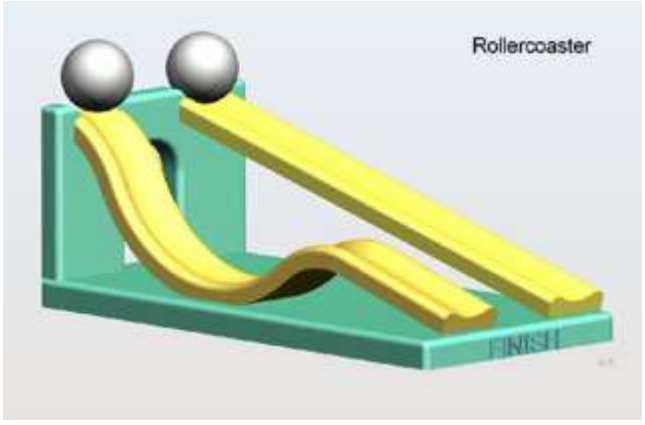
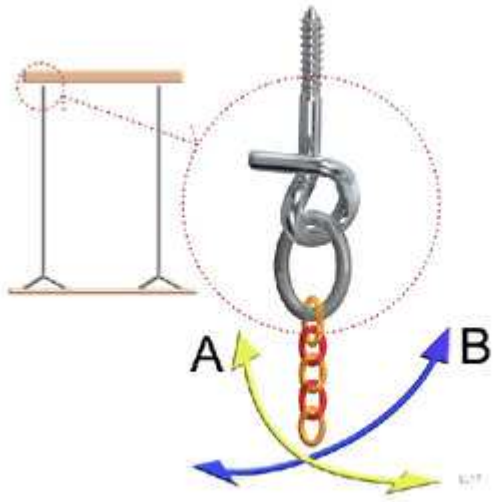
Rollercoaster.



In the image you see a simplified rollercoaster. The steel balls have the same dimensions and the same mass. The only difference is the path the steel ball will follow.

The question for this technical riddle is as follows: Which ball will reach the Finish first?

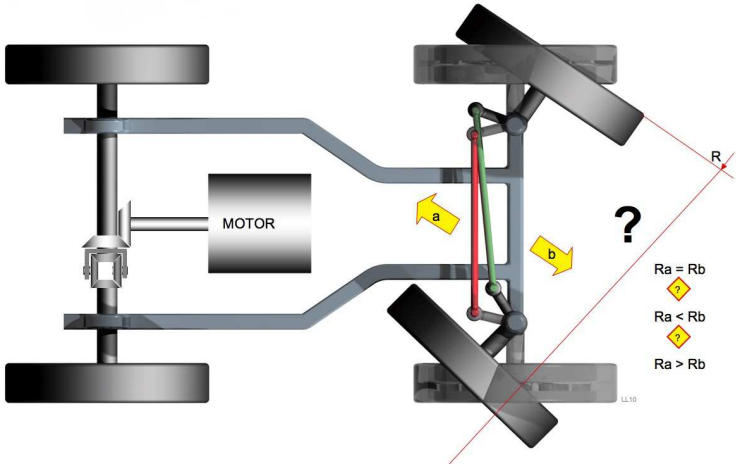
Swing seat hook.



Suppose you need to mount a swing seat.
In the hardware store you have to buy two swing seat hooks. See picture.

In which position should the hook be mounted onto the beam to experience the minimum amount of wear. Is this in the A or B position?

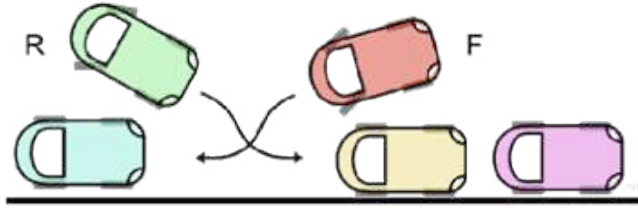
Ackermann steering principle.



In a vehicle the steering geometry is designed in such a way that both front wheels are using different trace circles with different radii but using the same point of origin. This principle is called the Ackerman geometry.

In a vehicle, are the front and rear turning circles equal if the vehicle is going forwards or backwards?

Parking.



If you park a car in a small parking area you need to drive backward (rearward parking). Front parking is then impossible. Apparently there is a difference going forwards or going backwards.

Why is this?

Space lift.

To lift someone of 80 kg a force of (80 kg x 9.8 m/s2 =) 784 N is required.

To lift a person into space only a very small force is required.

Why is there no space elevator?

Hourglass.

A closed cylinder is completely filled with water and inside the cylinder there is an hourglass floating at the top. Once the cylinder is rotated, the hourglass remains at the bottom for a while.

How is this possible? Why does it not immediately ascend the hourglass?

Candle.

Can a candle, in an environment where there is no gravity, (spaceship) burn?