**Story script for escape room game**

**Story scene (before the actual game):**

**A few days ago you received a surprising letter. At first you thought that this letter was a mistake because you were told that one of your distant relatives had died and that you had become the heir to an old house. Since you don't know the name of this person, you make the decision to visit the house of this mysterious relative to find out more about this person.**

**A short time later you are standing in front of an old, run-down villa on the outskirts of town. It's hard to imagine that anyone lived here until recently! When you enter the house you are surprised to find that the house is completely empty. There is no furniture or objects of your supposed relative in any room of the villa. After you have searched all the rooms, you decide to take a look at the attic. When you reach the attic, you thought at first that it was also completely empty. However, you discover a large wooden chest in a corner of the cramped room.**

**You approach the box and open the heavy lid. You examine the contents with great surprise. Next to a pile of old documents in the chest is an old computer connected to an oversized battery via a network of wires. You lift the computer out of the box and place it on the creaking wooden floor. After a short search you will find a power button on the gray box. When you press the button, the computer starts whirring and displays a message from your relative on its screen...**

**Actual game text:**

**First screen:**

**Hello Stranger! If you're reading this, I'll be dead long ago. I was a successful adventurer and explorer for many years. I would like to bequeath the treasures I found on these journeys to a person who is worthy of these treasures. That's why I chose you. The treasures are hidden somewhere in this house. But before you get it you have to prove yourself in several tests and riddles. This computer (and the papers in the box) will help you pass the exams. Keep in mind that both your time and your attempts to solve the problem are limited by the battery on this computer. Much luck!**

**Are you ready for the first exam?**

**Puzzle 1 (number systems) (entering the solution):**

**Mistake!!!!**

**A fatal error occurred while opening the file! Code entry required for successful decryption of the file!**

**Hint: The different number systems will help you!**

**0b10000010001 + 0x49C – 0b11001000 = ?**

**Solving the riddle: 2021**

**Puzzle 2: (Entering the solution)**

**One of my many expeditions took me to a remote mountain village. I learned from one of the people living there that there is said to be an ancient temple in this area that is said to be filled with many precious treasures. The villagers told me that this temple is said to be on the highest peak in this mountain range. After carefully studying the surrounding landscape, I found that the mountain range can be approximated by the function f.**

**Give the x-coordinate of the summit! Round your result to one decimal place.**

**f(x)=-0.15x^4-〖0.4x〗^3+0.9x^2+1.3x+2.7**

**Solution to the riddle: -2.8**

**Puzzle 3: (multiple choice)**

**Now that I knew where to look, I packed my things for the hike to the summit. I was faced with choosing my gear. My hiking equipment was more suitable for tours with a less steep route (gradient between -1 and +1). I only needed the climbing equipment for larger inclines.**

**The coordinates of the village are: D (0/2.7). The coordinates of the summit are known from the previous exercise (the y-coordinate is also rounded to one decimal place). Decide what equipment is needed based on the average gradient of the tour!**

**Possible answers: hiking equipment climbing equipment**

**Solution: climbing equipment**

**Puzzle 4:**

**Mistake!**

**A fatal error occurred while opening the file! Code entry required for successful decryption of the file! Give your solution in binary!**

**0x40A + ? = 1234**

**Solution: 11001000**

**Puzzle 5:**

**Another journey took me to a distant island in the South Seas. The people living there have been regularly attacked by pirates for a long time. I helped the islanders drive off the pirates. In gratitude they gave me land on their island. They gave me a 200 m long rope to stake out my country with. I chose a spot on the beach because I only had to stake out my property on three sides. What is the maximum size of my property under these conditions? Give your solution in dm²!**

**Solution: 50**

**Puzzle 6:**

**Mistake!**

*A fatal error occurred while opening the file! Code entry required for successful decryption of the file! Give your answer in hexadecimal!*

*0b11010 + 0x? = 56*

*Solution: 1E*

*Puzzle 7:*

*Many years ago I discovered an ancient temple in a distant land with a good friend. We heard that many ancient treasures are hidden in this temple. So we started our expedition through the centuries-old walls. We soon discovered a dark room and quickly realized that many traps had been set up in it. At the entrance to this room, however, we discovered some clues that should help us find a safe way through this sea of traps.*

*- The course of the safe path resembles the course of a third-degree, fully rational function. (f(x) = ax³+bx²+cx+d)*

*- The entrance door is on point E (-2|0).*

*- The exit door is on point A (1|3).*

*- The function has an extreme point at -4/3.*

*- The function graph runs through the origin.*

*Calculate the parameters of the functional equation and then select all the correct answer options.*

*Possible answers: a = 1 c = 4 b = 2 c = 0*

*Solution: Correct is x x x*

*-> The function is: f(x) = x³+2x²*

*Puzzle 8:*

*Now that we knew the approximate route, we wanted to start walking. My friend pointed out to me that he could not see the exact path. He wanted to know in which direction he had to run. Calculate the exact angle of our route at the front door and round your result to the nearest whole number of degrees!*

*Solution: 76°*

*Last screen:*

*Congratulations! You have successfully mastered all exams and have proven yourself worthy to inherit my treasure. You can find him in the kitchen on the ground floor of the house under the old wooden floor. I wish you much fun with it!*

*Eventual story scene at the end:*

*You are relieved that you passed your relative's trials. After a short breather, you get up and run as fast as you can to the kitchen of the old mansion. You quickly discovered a secret compartment under the old floor. You pull a dusty wooden box out of the compartment. What precious treasures will be in there? You open the lock of the chest with great anticipation... Instead of riches from distant lands, the chest only contains a stack of ancient math books.*

*END*