

LANDING ON MARS - LEVEL 3

SUBTASK 1

Travelling to Mars is neither simple nor entirely safe. You must prepare carefully if you are to succeed. You have just found out that the time of day you choose to try to land on Mars can be very important. There are large asteroid belts out there in space that move differently depending on the time of day you choose to travel! Luckily, you and the tardigrades have created a program that simulates (tests something using a computer program) the chance of colliding with asteroids at three different times.

Now your task is to find out the time of day when you have the biggest chance of successfully landing on Mars without colliding with an asteroid. You are going to run your simulation at 12:00, 15:00 and 18:00, in the middle of the day, in the afternoon and in the evening.

Run the simulation 100 times for each of the times given. For each given time, you must document how many successful landing attempts the simulation shows and how many failed landing attempts the simulation shows.

12:00

Successful landing attempts

Number:

Failed landing attempts

Number:

15:00

Successful landing attempts

Number:

Failed landing attempts

Number:

18:00

Successful landing attempts

Number:

Failed landing attempts

Number:



SUBTASK 2

Ta-daaa! Now you know more about when it is safest to journey to Mars. However, you need to tell the other people who are going with you. To present and explain your results to, and convince, the others about when you need to travel, you need to convert all the figures you collected, called data, into a bar chart.

Your task is to make a bar chart for all the different times, showing how many successful attempted landings and how many unsuccessful attempted landings were generated by the simulation in the previous subtask.

Instructions

1. Make space for two bars on the x-axis. One bar will show the number of successful attempted landings and the number of failed attempted landings. Mark it and write it on the x-axis.
2. On the y-axis, you show the number of attempts that were successful or failed. Start by scaling the y-axis from 0–100. Make one mark for each centimetre on the y-axis and write the number of attempts.
3. For each time, create a bar for each outcome. This means for how many times the attempted landing succeeded or failed. So that this is as correct as possible, use a ruler when you measure how tall each bar should be.

12:00



15:00



18:00



