

The Martian

Ch. 1

1. Explain what Hermes is?
2. What is MAV?
3. What is MDV?
4. Which Ares crew is Mark a part of?
5. Explain how they get to Mars aboard Hermes.
6. What's the Hab
7. What's an EVA?
8. How did he stay alive?
9. How many people were part of his crew in total?
10. How long was it supposed to take them to get to Mars?
11. How long were they going to stay?

Ch. 2

1. Why can't the MDV thrusters support its own weight?
2. When is Ares 4 supposed to arrive on Mars?
3. What are Mark Whatney's jobs on the mission?
4. How is he making soil?
5. Mark Whatney thinks his food, if he can get potatoes to grow, will last him how many days?

Ch 3.

1. Most of the astronaut food would have been sent ahead of time and freeze dried. Why are the potatoes in great shape and still able to be used for making new potato plants?
2. What is the “basic” recipe for making water? (Sol 30)
3. The Martian atmosphere is what percentage CO₂?
4. Why is it hard to collect the CO₂ even though it is such a high percentage of the atmosphere?
5. What type of fuel did the MDV use?
6. What is this leftover fuel going to be used to make?

Ch 4

1. Why it Mark Whatney camped out in Rover 2? Explain

Ch. 5

1. Sol 38- Explain Whatney's plan for getting rid of the hydrogen
2. Sol-38- What is the downside to this plan?
3. Sol 39- What's the new plan and how could this keep the bacteria alive?
4. What was there an explosion, hadn't he removed all of the oxygen in the room?

Ch 6

1. We learn about Venkat Kapoor (director of Mars operations) on the day of Mark Watney's memorial. At this time how much longer do the other 5 astronauts have on their mission back to Earth?
2. Why does Venkat want satellite images of the Area 3 area, and why does Teddy (administrator of NASA) not want them?
3. What is Mindy Park's job?
4. What job does Annie Montrose have and why is she so upset?
5. What does the Ares 3 crew think about everything?
6. What is the SETI network and what are they trying to do?
7. What does JPL stand for? It's not in the book (just the letters JPL), but any guesses?
8. What is the preliminary plan with Ares 4 to rescue Watney?

Chapter 7- 3200km = Grand Rapids to Phoenix, AZ

1. Why does communication from Houston to Mars vary from 4-24 minutes in time lag?
2. Why are his solar panels going to get fewer watts than on the Earth?
3. On Sol 67, he made his first driving experiment. What issue does he run into?
4. What is the RTG originally used for and what is he going to use it for?

5. How will he keep the plants alive while he's venturing out on Sirius 4
6. What important lessons did Apollo 13 teach us about CO₂ cartridges that Mark mentions? You may need to look it up.

Chapter 8

1. What is NASA worried that Mark Whatney might do?
2. How did the post office make a goof up?
3. What is one of the reasons Mark Whatney was added to the Ares 3 mission?
4. What is a concern about him venturing to Ares 4 MAV too soon?
5. It turns out Mark is not heading for Ares 4. What is he heading towards and why?

Chapter 9

1. He drives the Rover at 25 kph, what is that in mph approximately?
2. Mark talks about using Phobos to help guide him. What is Phobos?
3. How does Mark get the lander on the roof?

Chapter 10

1. For the first part of his trip back to the Hab, how does he find his way?
2. The lander is too big to take into the hab, but why else does he leave it outside?
3. Mark is worried about the batteries because electronics should be kept at at least what temperature?

Chapter 11

1. Why doesn't Mark want to use his sharpie outside of the hab.
2. Jack has an idea for making transmission faster as they try to do some reprogramming of computer software. Venkat doesn't want to do it. What is this message and why is Venkat against it?
3. What problem does Mark have with the laptop and why?

Chapter 12

1. How long should someone be able to survive decompression of a space suit outside on Mars.
2. Why is Lewis so upset about the good news that Mark is alive?

Chapter 13

1. What is the backup means of communication Mark has learned, just in case their current communication fails.
2. What is the Hohman Transfer Window? Look it up.
3. What do they plan to send Mark in the supply probe?
4. Why was the water reclaimer not working?

Chapter 14

1. What does Mark need smoke for?
2. What does Mark light on fire to make the smoke?
3. How does he get the blown off air lock back to the hab?
4. With the future of potato farming done, what's the problem?

Chapter 15

1. After the breach of the Hab, there is concern about Mark staying alive. How does this change the preparation of the probe they are planning on sending him and why?
2. What happens to the launch of the probe and why?

Chapter 16

1. How could the Chinese help this situation and what might they ask for in return?
2. What is project Elrond?
3. What does the Ares crew think about project Elrond?

Chapter 17

1. Why is Watney drilling holes in the top of one of the rovers?
2. What's the problem with Pathfinder and how did this happen?

Chapter 18

1. In the world of physics, Force is measured in $\text{kg}(\text{m}/\text{s}^2)$, but because that gets tiring, we have turned this unit into a "Newton". In that same manner, what has he turned Kilowatt-hours/sol into?

Chapter 19

1. Why does the Hermes spin? And why isn't it currently spinning?
2. If they don't get the probe that contains the extra food for Watney (and the rest of the Ares crew) what does Johanssen inform her Dad that their plan would be?

Chapter 20

1. Why is Watney cutting up the Hab?

Chapter 21

1. What are the people back on Earth concerned about with Watney's trip and how will it impact things?
2. Explain the difference between raw and cooked potatoes that he talks about towards the end of the chapter

Chapter 22

1. As Watney is traveling, he often talks about elevations. Here in Caledonia our elevation 810 feet. What does that mean?
2. How does Watney realize he is in a dust storm and what does he do to figure out how to escape this bad situation?

Chapter 23

1. Why/How does Watney's crash take place?

Chapter 24

1. Why is he getting less charge from his solar panels as he descends to the bottom of the crater?

Chapter 25

Chapter 26