

## Lost on the Moon

Your spaceship has just crashed on the light side of the moon. You were scheduled to rendezvous with a mother ship 200 miles away on the lighted surface of the moon, but the rough landing has ruined your ship and destroyed all the equipment on board except for the 15 items listed below. (Note: you are able to consume food/water/medicine inside your space suit).

Your crew's survival depends on reaching the mother ship, so you must choose the most critical items available for the 200-mile trip. Your task is to rank the 15 items in terms of their importance for survival. Place a number 1 by the most important item, number 2 by the second most important, and so on, through number 15, the least important.

---

Item	Your Rank (1)	Group's Rank (2)	NASA's Rank (3)
Box of matches			
Food concentrate			
50 feet of nylon rope			
Parachute silk			
Solar-powered portable heating unit			
Two .45 caliber pistols			
One case of dehydrated milk			
Two 100-pound tanks of oxygen			
Stellar map (of the moon's constellations)			
Self-inflating life raft			
Magnetic compass			
5 gallons of water			
Signal flares			
First-aid kit containing injection needles			
Solar-powered FM receiver-transmitter			

---

Error points are the absolute difference between your rankings and NASA's (disregard plus or minus signs).

- 0 - 25: excellent
- 26 - 32: good
- 33 - 55: fair
- 56 - 70: oops
- 71 - 112: oh well

---

Item	NASA's Reasoning	NASA's Rank
Box of matches	No oxygen to sustain flame, virtually worthless	15

Food concentrate	Efficient means of supplying energy requirements	4
50 feet of nylon rope	Useful in scaling cliffs, tying injured together	6
Parachute silk	Protection from sun's rays	8
Solar-powered portable heating unit	Not needed unless on dark side	13
Two .45 caliber pistols	Possible means of self-propulsion	11
One case of dehydrated milk	Bulkier duplication of food concentrate	12
Two 100-pound tanks of oxygen	Most pressing survival need	1
Stellar map (of the moon's constellations)	Primary means of navigation	3
Self-inflating life raft	CO <sub>2</sub> bottle in military raft may be used for propulsion	9
Magnetic compass	Magnetic field on moon is not polarized; worthless for navigation	14
5 gallons of water	Replacement for tremendous liquid loss on lighted side	2
Signal flares	Distress signal when mother ship is sighted	10
First-aid kit containing injection needles	Needles for vitamins, medicines, etc., will fit special aperture in NASA space suits	7
Solar-powered FM receiver-transmitter	For communication with mother ship; but FM requires line-of-sight transmission and short ranges	5

---

## Secrets to Success in CS 61A

CS 61A is definitely a challenge, but we all want you to learn and succeed, so here is a collection of various tips that might help in your journey:

- Ask questions. If you encounter something you don't know or aren't sure about a concept or problem, *ask* away. We're here to help you learn, and if you ask a question, that tells us where we can help with your understanding of the material. The process of asking questions itself can also be helpful in figuring out for yourself what you would specifically like to ask about, and in therefore pinpointing concepts that you believe you can learn more about.

- Study in groups. Again, this class is not trivial; you might feel overwhelmed going at it alone. Send a message and reach out to other students in the class; work together on assignments or study together to prepare for exams, as long as you don't violate the course policy on Academic Honesty as stated in the [Syllabus](#).
- When stuck on a problem, try to explain the area in which you are stuck. This doesn't need to require a person who understands how to solve the problem (or even a person - this practice is often referred to as **rubber ducking** since you can take a rubber duck and consider it your practice audience) because the main goal is for you to clarify your own thoughts and figure out where exactly you're getting stuck with your understanding and code. From there you can focus on that portion to better your understanding.
- If you're still feeling stuck, feel free to make use of the class [Piazza](#) (our course forum for asking and answering questions) or attend office hours.
- Office hours gives you time with the instructors or staff by themselves, and you will be able to get some (nearly) one-on-one instruction. You are *not* intruding; the instructors and staff are here to help as you learn.
- Do (or at least attempt seriously) all the homework. We do not give many homework problems, but those we do give you may find are challenging, time-consuming, and rewarding.
- Do all the lab exercises. Most of them are designed as more of an introduction to the course material, and may take around the length of a lab section. This is a great time to get acquainted with new material. Feel free to ask the staff members in your lab section or come to office hours if you would like more guidance.
- Optional lab questions are 'optional' in the sense that they are extra practice, not that they are material that's out of scope. Make sure you do them if you have time.
- Do the readings before lecture. They can be helpful in offering an overview of the material covered in lecture and other aspects of the class, as well as being a reference as part of the overall textbook that you can refer to as you go through the course.
- When preparing for the exams, **do past exam questions!** Lecture, lab, and discussion provide a great introduction to the material, but the main way to learn how to solve exam-level problems is to do exam-level problems. You can find past exams (and other resources) under the [Resources](#) tab of the website. Many past exams also have solutions or walkthrough videos where past staff members may walk you through the solution to the exam.