

LOST ON THE MOON 0

COMPUTER SCIENCE 61A

August 27, 2015

1 Lost on the Moon

Your spaceship has just crashed on 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.

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) | $ (3) - (1) $ | $ (3) - (2) $ |
|--|------------------|---------------------|--------------------|---------------|---------------|
| 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 | | | | | |
| Total | | | | | |

Solution:

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

- 0 - 25: excellent

- 26 - 32: good
- 33 - 45: 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 |
| Fifty 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 | CO2 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 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 |