

Sujet n°13

*Please do not write on the subject paper and don't forget to give back the examination paper at the end of the test.*

**STATISTICS**



- 1) This is an image of a region near the Moon's South Pole taken by the Clementine spacecraft. The image size is 375 km x 375 km.  
What is the area of this picture ?
- 2) In the table below, all visible craters are ordered by size to determine the global crater surface.  
Assuming that each crater is a perfect circle, fill in the columns.
  - a) Compute the average radius.
  - b) Compute the area of one crater of each type using the average radius and work out the global surface. Round off values to the tenth.
  - c) What is the surface covered by craters ?

| Radius (km)   | Average radius (km) | Number of Craters | Area of one crater (km <sup>2</sup> ) | Total Crater Area (km <sup>2</sup> ) |
|---------------|---------------------|-------------------|---------------------------------------|--------------------------------------|
| [25 ; 37.5]   |                     | 4                 |                                       |                                      |
| [12.5 ; 24.5] |                     | 8                 |                                       |                                      |
| [6 ; 12]      |                     | 20                |                                       |                                      |
| [4 ; 5.5]     |                     | 18                |                                       |                                      |

- 3) Study these data :
  - a) Compute the mean of the average radius.
  - b) Determine in which interval is the median radius.
- 4) What percentage of the picture is covered by an impact crater ?