```
import sys
filename = sys.argv[1]
#gives you the flexibility to name your input file when you execute your .py file from
the command line, rather than hardcoding the name into your program.

file = open(filename, 'r')  #instead of file = open("Data6.txt",'r')
#for future reference, if you want a file to write to, use 'w'

lines = file.readlines()
#returns a list, every line in the file becomes an entry in the list.
#annoying: newlines are not removed

for line in lines:
        line.strip() # removes "\n" for you
        line_parts = line.split()
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```

readlines([sizehint])
    Read until EOF using readline() and return a list containing the lines thus read. If the optional sizehint argument is present, instead of reading up to EOF, whole lines totalling approximately sizehint bytes (possibly after rounding up to an internal buffer size) are read. Objects implementing a file-like interface may choose to ignore sizehint if it cannot be implemented, or cannot be implemented efficiently.

strip([chars])
    Return a copy of the string with the leading and trailing characters removed. The chars argument is a string specifying the set of characters to be removed. If omitted or None, the chars argument defaults to removing whitespace. The chars argument is not a prefix or suffix; rather, all combinations of its values are stripped:

split([sep [,maxsplit]])
    Return a list of the words in the string, using sep as the delimiter string. If maxsplit is given, at most maxsplit splits are done. (thus, the list will have at most maxsplit+1 elements). If maxsplit is not specified, then there is no limit on the number of splits (all possible splits are made). Consecutive delimiters are not grouped together and are deemed to delimit empty strings (for example, "'1„2'.split(',')"returns "['1', '', '2']"). The sep argument may consist of multiple characters (for example, "'1, 2, 3'.split(', ')" returns "['1', '2', '3']"). Splitting an empty string with a specified separator returns "['']".

    If sep is not specified or is None, a different splitting algorithm is applied. First, whitespace characters (spaces, tabs, newlines, returns, and formfeeds) are stripped from both ends. Then, words are separated by arbitrary length strings of whitespace characters. Consecutive whitespace delimiters are treated as a single delimiter ("'1 2 3'.split()" returns "['1', '2', '3']"). Splitting an empty string or a string consisting of just whitespace returns an empty list.

splitlines([keepends])
    Return a list of the lines in the string, breaking at line boundaries. Line breaks are not included in the resulting list unless keepends is given and true.

The following functions from the math module (remember to "import math") might be helpful:

cos(x)
    Returns the cosine of x radians.

hypot(x, y)
    Return the Euclidean norm, sqrt(x*x + y*y). This is the length of the vector from the origin to point (x, y).

sin(x)
    Return the sine of x radians.

tan(x)
    Return the tangent of x radians.

Angular conversion:

degrees(x)
    Converts angle x from radians to degrees.

radians(x)
    Converts angle x from degrees to radians.