Create a function file\_input that takes two arguments: in\_or\_out and prompt

Run an infinite while loop

Try

Assign input(prompt) to file\_name

If in\_or\_out is “INPUT”

Open file\_name for reading and assign it to inFile

Return inFile

Else if in\_or\_out is “OUTPUT”

Open file\_name for writing and assign it to outFile

Return outFile

Except any IOErrors

Print please enter a valid file name

Create function get\_lat that takes a string called line

Return line from -55 to -39 stripped and as an float

Create function get\_lon that takes a string called line

Return line from -40 to -24 stripped and as a float

Create function float\_input that takes a string called prompt

Infinite while loop

Try

Get the float value of input using prompt and assign it to fl\_input

Return fl\_input

Except any ValueErrors

Print please enter a valid number

Create function get\_dist\_miles that takes four int arguments lat1,lat2,long1,long2

Subtract long1 from long2 and assign to diffLong

Assign the difference of lat2 and lat1 to diffLat

Assign sin(diffLat/2)^2 + cos(lat1) \* cos(lat2) \* sin(diffLong/2)^2 to a

Assign 2 \*atan2(squareroot of a and squareroot of 1-a) to c

Assign the product of c and 3961 to d

Return d

Create function cont\_prog with no arguments

Infinite while loop

Assign the input from “continue playing” to cont

If cont is “Y”

Return True

Else if cont is “N”

Return False

Else

Print please enter Y or N

Create function int\_input with string argument prompt

Infinite while loop

Try

Get the int value of input using prompt and assign it to intInput

Return intInput

Except any ValueErrors

Print please enter a valid number

keep\_going is true

While keep\_going

Call file\_input with arguments INPUT and “please enter the name of the input file” and assing it to \ mtr\_file

Call file\_input with arguments OUTPUT and “please enter the name of the output file” and assign it to\ output\_file

userLat = 91

userLong = 181

userRad = -1

Infinite while loop

If userLat >90 or userLat < -90

Call float\_input with argument “please enter lat between -90 and 90” and assign it to\ userLat

Else

Break

Infinite while loop

If userLong >180 or userLong < -180

Call float\_input with argument “please enter lat between -180 and 180” and assign it \ to userLong

Else

Break

Infinite while loop

If userRad < 0

Call int\_input with argument “please enter radius to search for meterors” and assign it\ userRad

Else

Break

For line in mtr\_file

Call get\_lat with line and assing it to mtr\_lat

Call get\_long with line and assign it to mtr\_long

Call get\_dist\_miles with arguments userLat, mtr\_lat, userLong, mtr\_long and assing it to\ dist\_from\_pt

If dist\_from\_pt < userRad

Output\_file.write(line + “\n”)

Call Cont\_prog() and assign it to keep\_going