NAME:..

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Math 113 Calculus – Homework 4
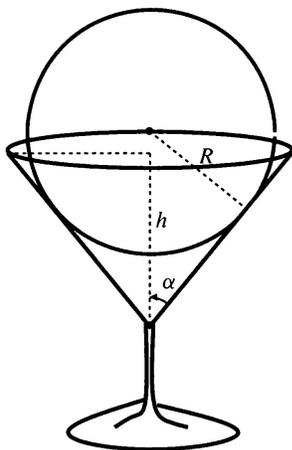
1	TOTAL
100	100

Please do not write anything inside the above boxes!

Show your work in reasonable detail. A correct answer without proper or too much reasoning may not get any credit. No hanging expressions will be read. No interpretation of your work will be attempted. Write everything you want us to know. Do not leave anything to mind reading; we do not do that in Math department, yet!

Q-1)

A martini glass in the shape of a right-circular cone of height h and semivertical angle α (see Figure 7.14) is filled with liquid. Slowly a ball is lowered into the glass, displacing liquid and causing it to overflow. Find the radius R of the ball that causes the greatest volume of liquid to overflow out of the glass.

Figure 7.14