An ice cream cone is to be dipped in chocolate. The cone can be described by the equation $z^2 = 9\,(x^2+y^2)$, with $0 \leq z \leq 9$ and x, y, and z in centimeters. The dipping process is such that the resulting (surface) density of chocolate on the cone is given by $\sigma = 1 - \frac{z}{9}$ in grams per square centimeter. Find the total amount of chocolate on the cone.

(There is no ice cream on the cone!)

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