

6. (10 points) Using techniques from calculus, find the dimensions which will maximize the surface area of a solid circular cylinder whose height h and radius r , each in centimeters, are related by

$$h = 8 - \frac{r^2}{3}.$$

[Hint: the surface area of a cylinder is given by $2\pi r^2 + 2\pi r h$.]

$h =$ _____

$r =$ _____