***Maximizing Volume of a Closed Top Box Name:***

Fixed Quantity:

Quantity to Optimize:

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| --- | --- | --- |
| Shape | Volume | Surface Area |

What is the greatest volume of a closed topped box with a surface area of 10000 cm2? Find to the nearest cm. Show calculations on another page.

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| --- | --- | --- | --- |
| Surface area (cm2) | base (cm) | height (cm) | Volume (cm3) |
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RESULTS…

Maximum volume:

Dimensions giving maximum volume:

***Solving Equations***

|  |  |
| --- | --- |
| C2 - determine optimal dimensions of two-dimensional shapes and three-dimensional figure; |  |
| **C1** - solve problems involving measurement and geometry |  |

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Solve for h if V=*1000 cm3 and *r=10 cm* |  | *Solve for r if V=*100 cm3 and *h=7 cm* |
|  | *Solve for h if V=5*00 cm3 and *b=12 cm* |  | *Solve for h if SA=*1000 cm3 and *r=11 cm* |