Question: Maximize Shapes

You have been hired to design a container that will hold 1,210 cm$^3$. The container is shaped like a Pyramid with a Square Base.

The formula's for the Surface Area and Volume of the shape are:

$\text{SA} = w^2 + 2w \sqrt{w^2 + h^2}$

$\text{Vol} = \frac{1}{3}w^2 h$

The factory can't produce a container with a width < 1 cm or a width > 5000 cm.

Determine the minimum Surface Area to contain this Volume. Use the Optimization[Minimize] function.

1.) What is the width of the container?

2.) What is the height of the container?

3.) What is the Surface Area of the container?
Information Fields:
No fields set