**MINIMIZING SURFACE AREA PRACTICE**

1. Matthew is constructing a rectangular prism with a volume of 729 in3. It will have the least possible surface area. Find the dimensions and surface area of the prism.
2. Yasmin is constructing a rectangular prism using exactly 96 cm3 of plasticene. The prism will have the least possible surface area. Find the dimensions and surface area of the prism.
3. A rectangular prism is 0.85 m3. Determine the dimensions that minimize the surface area, and state the surface area.
4. A cylindrical storage tank holds 1800 cubic feet of gasoline. Determine the area of metal needed to construct the tank, with the least surface area. State the dimensions.
5. Carol is designing a gift box. It will be a cylinder with a volume of 220 cm3. Determine the radius and height of the box that gives the least surface area.
6. A cylinder has a volume of 1000 000 ft3. Determine the minimum surface area and state the dimensions that give this.
7. Eleni is purchasing a hot tub. She is buying a high end model that holds 1500 L of water. Determine the area on her deck that will be taken up by a hot tub that is a cylinder, and a hot tub that is a rectangular prism. It might help to know that the density of water is 1000L/m3.