

MA 16010 Lesson 25: Optimization II

Recall (Optimization step-by-step):

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Exercise: A norman window has the shape of a semicircle on top of a rectangle. If the perimeter of the Norman window is to be 4 m, find the dimensions (of the rectangle) that admits the most light.

s **Exercise (effectivity of container shapes):** We have 3 m^3 of material to construct a container. What maximal volume of the container can be achieved, assuming its shape is:

(a) box with square base:

(b) cylinder:

(c) sphere (just for comparison):

Exercise: A soft drink company plans to make cylindrical cans of volume exactly 300 cm^3 . The cost of aluminium to make the cans is \$0.001 per cm^2 . What is the minimal possible cost of materials per can?