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Group Work 19

1. (§4.7, #16) A rectangular storage container with an open top is to have a volume of 10 m^3 . The length of the base is twice the width. Material for the base costs \$10 per square meter, and material for the sides costs \$6 per square meter. Find the cost of materials for the cheapest such container.

(a) Picture

(b) Function to optimize and constraint(s)

- Optimize:

- Constraint(s):

(c) Function to optimize in 1 variable (with domain)

(d) Solve

2. (§4.7, #38) A wire 8 meters long is cut into two pieces. One is bent into a square for a frame for a stained glass ornament; while the other piece is bent into a circle for a TV antenna. To reduce storage space, where should the wire be cut to minimize the total area of both figures? Give the length of wire used for each.

(a) Picture

(b) Function to optimize and constraint(s)

- Optimize:
- Constraint(s):

(c) Function to optimize in 1 variable (with domain)

(d) Solve