

RR/Modeling and Optimization Worksheet

1. We want to construct a box whose base length is three times the base width. The material used to build the top and bottom cost $\$10/\text{ft}^2$ and the material used to build the sides cost $\$6/\text{ft}^2$. If the box must have a volume of 50 ft^3 determine the dimensions that will minimize the cost of the box.

2. Two people are 50 feet apart. One of them starts walking north at a rate so that the angle shown in the diagram below is changing at a constant rate of 0.01 rad/min. At what rate is the distance between the two people changing when $\theta = 0.5$ radians?

