

1. §4.7, p.263, #14: A rectangular storage container with an open top is to have volume of 10 m^3 . The length of its base is twice the width. Material for the base costs \$10 per square meter. Material for the sides cost \$6 per square meter. Find the cost of materials for the cheapest such container.

2. §4.7, p.263, #30: A Norman window has the shape of a rectangle surmounted by a semicircle. (Thus the diameter of the semicircle is equal to the width of the rectangle.) If the perimeter of the window is 30 ft, find the dimensions of the window so that the greatest amount of light is admitted.

3. §4.7, p.264, #36: A fence 8 ft tall runs parallel to a tall building at a distance of 4 ft from the building. What is the length of the shortest ladder that will reach from the ground over the fence to the wall of the building?

4. §4.8, p.298, #6: Use Newton's Method with the initial approximation $x_1 = -3$ to find x_3 , the third approximation of the root of $\frac{1}{3}x^3 + \frac{1}{2}x^2 + 3 = 0$.

5. §4.8, p.298, #14: Use Newton's Method to approximate the root of $2.2x^5 - 4.4x^3 + 1.3x^2 - 0.9x - 4.0 = 0$ in the interval $[-2, 1]$, correct to six decimals.