Homework 1, Graded Problems.

1. Refer to Problem 62, Section 1.1 of your text. But this time, instead of laying a cable, you’re going to *swim* from the power plant to point *Q*. Then you will *walk* from point *Q* to Dayton.

You swim at a rate of 100 ft/min and you walk at a rate of 200 ft/min. The total time, *T*, it takes you to get from the power plant to Dayton is a function of the distance *x*.

   (a) (5 pts.) Compute *T*(0).
   (b) (5 pts.) Compute *T*(10560).
   (c) (10 pts.) Compute *T*(*x*). (Practice on *x* = 500 ft or *x* = 1000 ft if you need to.)
   (d) (5 pts.) Can you make it from the power plant to Dayton in less than one hour? Justify your answer.

2. (10 pts.) \( f(x) = \frac{x + 1}{2 - x} \) and \((f \circ g)(x) = x + 2\). Find \(g(x)\).

3. Suppose that the function

   \[ y = A \sin \left( \frac{2\pi}{B} (x - C) \right) \]

   has the graph shown below. Find the exact values of \(A\), \(B\) and \(C\) (5 pts. each).

![Graph of the function y = A sin(2pi/B(x - C))](image)

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