Math 1210-2
Tuesday October 23

Max-min examples, §3.4

We still have exercises 26, 3 from Monday.
After those:

**Exercise 1.** Find the points on the parabola \( y = x^2 \) closest to \((0, 5)\).

**Exercise 2.** Derive Snell's Law (for light) as the solution to the following minimization problem:

Suppose a particle can travel at speed \( c_1 \) in medium 1, above the x-axis, and at speed \( c_2 \) in medium 2, below the x-axis.

If the particle wishes to get from \((x_1, y_1) \ (y_1 > 0)\) to \((x_2, y_2) \ (y_2 < 0, x_2 > x_1)\) in the shortest amount of time, which path should it take? (Use back of page!)

![Diagram](attachment:diagram.png)