

## Mathematics 1110H – Calculus I: Limits, Derivatives, and Integrals

TRENT UNIVERSITY, Fall 2025

### Workshop Problems for 2025-11-14

Just in case they want a little more practice before Test #4 ...

- A rectangle has its base on the  $x$ -axis and its top corners are on the parabola  $y = 16 - x^2$ . Find the maximum area of such a rectangle.
- Sticky Wicky, who is 1  $m$  tall, is being chased by a 4  $m$  tall, Ent at night. Sticky is running at 5  $m/s$  directly away from the Ent, who is running directly towards Sticky at 10  $m/s$ . The Ent is carrying a lamp 3  $m$  above the ground, in the light of which Sticky casts a shadow upon the ground. How is the tip of this shadow moving at the instant that the Ent is 10  $m$  behind Sticky?