

Instructions: You have 30 minutes for this quiz. Show all of your work.

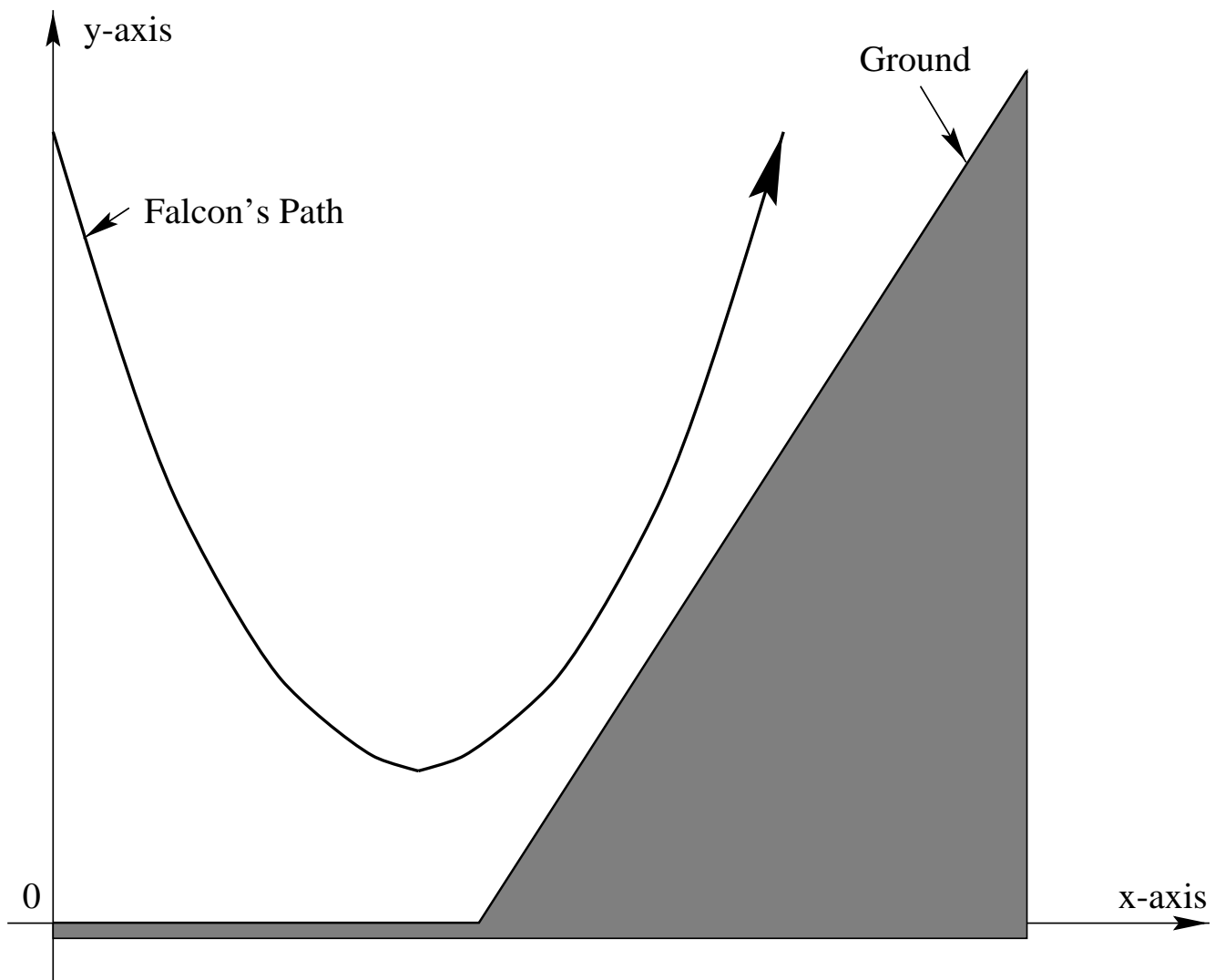
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Problem Description: A falcon is swooping down from the sky looking for prey. The falcon starts its dive at the y intercept. Its **path** is perfectly described by the quadratic equation:

$$P(x) = \frac{37}{900}x^2 - \frac{37}{3}x + 1000.$$

And, the surface of the **ground** is given by the multipart function:

$$G(x) = \begin{cases} 0 & 0 \leq x \leq 200 \\ 8x - 1600 & 200 \leq x \leq 300 \end{cases}$$



Note: This picture is not properly scaled.

Answer the questions on pages 2 and 3. Please show all your work.

Name _____

Student Id: _____

Math 120, Section A

Quiz 3

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4. (8 points) Write an equation modeling the falcon's vertical height above the ground as a multipart function, $H(x)$. Reminder: Don't forget to include the domain for each part of the function.
5. (10 points) What is the falcon's **minimum** vertical height above the ground when $200 \leq x \leq 300$?