

Math 120 - Winter 2008
Final Exam
March 15, 2008
Answers

- 7.9695 hours
- 13.763 years after 1980.
- (a) $x = 20 - \frac{19}{3}t, y = 8 - \frac{4}{3}t$
(b) $x = 1 - 4.472136t, y = 2 + 2.23607t$
- 4.751545 km.
- 807.6308 feet.
- To achieve the maximum area, the squares should have length zero (i.e., all the fencing should be used to make the 2:1 rectangle). (To achieve the minimum area, the squares should be 18.1818 feet long on each side.)
- (a)

$$f(x) = \begin{cases} -2x + 9 & \text{if } x \geq 1, \\ 6x + 1 & \text{if } x < 1. \end{cases}$$

- (b) $a = \frac{17}{9}$ is the only solution.