

Math 120 A - Spring 2009  
Final Exam  
June 6, 2009  
Answers

1. 142.647 years
2. (a)  $x = 10 - 5t, y = 1 + 2.5t$  (b)  $t = 1.56756756$  seconds
3. 9.4168575 miles
4. The optimal enclosure will be 125 meters wide by  $250/6$  meters high (i.e., the partitions will have length  $250/6$  meters).
5. (a)  $x = 100 \cos(0.819545 - 0.0682954t), y = 100 \sin(0.819545 - 0.0682954t)$  (b) 27.897431 seconds
6. 1.256384 seconds
7. (a)  $\frac{1 \pm \sqrt{3}}{2}$  (b)  $h^{-1}(x) = \frac{1}{3x} + \frac{2}{3}$