

Math 120 - Winter 2012  
Final Exam  
March 10, 2012  
Answers

1. (a)  $x = 10 - 1.6t, y = 0.6t$  (b)  $x = 3 - 0.24t, y = 7 - 0.24t$  (c)  $t = 6.026925$  seconds

2. 5.636775 hours

3.  $\theta = 0.85$  radians

4. (a) 1.75 seconds (b)  $(-0.8356238R, -0.549302R)$

5. 14.57249 hours

6. (a) 26.41304 hours (b) 91.306 %

7.

$$Area(x) = \begin{cases} \frac{1}{2}x \left( 17 + \frac{8}{7}(x - 7) + 25 \right) & \text{if } 0 \leq x \leq 7 \\ \frac{7}{2}(17 + 25) + \frac{1}{2}(x - 7) \left( 25 - \frac{20}{29}(x - 36) + 5 \right) & \text{if } 7 < x \leq 36 \end{cases}$$

8. (a)  $h^{-1}(x) = \frac{16x + 9 - \sqrt{288x + 81}}{128}$  (b) 0 and  $\frac{25}{9}$