

Math 120 A, B - Winter 2007  
Final Exam  
March 10, 2007  
Answers

1. 15.4374719 hours after midnight

2. 60.2355 years after 1980

3. (a)  $x = 7$  (b) One solution is  $g(x) = \frac{1}{12}x^2 + \frac{5}{12}x + 1$

4. 3.60987 cm

5. (a)

$$g(f(x)) = \begin{cases} (3x + 5)^2 & \text{if } x < -\frac{7}{3} \\ -3x - 4 & \text{if } x \geq -\frac{7}{3} \end{cases}$$

(b)

$$f(g(x)) = \begin{cases} 3x^2 + 5 & \text{if } x < -2 \\ 8 - 3x & \text{if } x \geq -2 \end{cases}$$

6. 29.5789 weeks from today

7. (a) 31.6763797 feet off the ground (b) 191.5370321 feet off the ground