Math 120 A, B Winter 2017
Final Exam
March 11, 2017
Answers

1. 1396.54 feet

2. (a) 8.897079 and 29.179843 dollars

   (b) 19.03846 dollars

3. (a) $y = 150 \sin\left(\frac{2\pi}{1200}(x - 100)\right) + 100$

   (b) 470.192 meters

4. (a) the graph is an upper semicircle, centered at $(0,0)$ with radius 2. Domain is $-4 \le x \le 4$, and range is $0 \le y \le 4$.

   (b) The range is $-5 \le g(x) \le 3$.

   (c) $A = 2$, $B = -2$.

5.
$$\text{area}(x) = \begin{cases} \frac{1}{2}\left(\frac{4}{3}x^2\right) & \text{if } 0 \le x \le 3, \\ \frac{1}{2} \cdot 3 \cdot 4 + \frac{1}{2}\left(4 + \frac{4}{7}x + \frac{16}{7}\right)(x - 3) & \text{if } 3 \le x \le 10. \end{cases}$$

6. 66.548 years after 2000.

7. (a) 1.3659921 radians per second

   (b) 228.35704 meters