

**Answer Key**  
**Math 1271**  
**Spring 2005 Final Exam**

**Multiple Choice Problems**

1. D
2. D
3. B
4. C
5. A
  
6. A
7. E
8. A
9. B (some texts would say C)
10. D
  
11. E
12. C
13. E
14. D
15. A

**Written Answer Problems**

16.  
i)  $\tan \theta = y/4$  ; ii)  $\cos \theta = 4/5$   
iii)  $2/25$  rad/sec
17.  $28/5$  or  $5.6$
18. disk method: *reduces to*  $56\pi \cdot \int_0^3 \sqrt{9-y^2} dy$   
washer method:  $4\pi \cdot \int_4^{10} x \cdot \sqrt{9-(x-7)^2} dx$   
volume is  $126\pi^2$   
[Hint - (this hint was included in later exams):  
note that the integral for  $\sqrt{9-x^2}$  can be  
interpreted as the area of a certain geometric  
figure in order to evaluate it]
19. absolute maximum:  $(1, 7)$  [also local]  
and  $(7, 7)$  ; absolute minimum:  $(5, -25)$
20.  $4.05$
21.  $y = (-1/9) \cdot x + (2/3)$