

# MATH 251    Extra Practice (Final Exam)    Answers

1. Both integrals are  $54\pi$
2.  $\min_D f(x, y) = -9, \max_D f(x, y) = 3$
3.  $3\sqrt{14}$
4.  $8\sqrt{2}\pi$
5. Both integrals are  $128\pi$
6.  $\min f(x, y) = 0, \max f(x, y) = 34$
7.  $\min_D f(x, y) = -13/27, \max_D f(x, y) = 6$
8.  $19x - 17y - 6z = 18$
9. b)  $12\frac{1}{6}$
10. b)  $2e + \sin 1$
11. c)  $36$
12.  $\pi/2$
13. Both integrals are 0.
14.  $-1/2$
15.  $(18^{3/2} - 2^{3/2})/12$
16.  $6\pi/5$
17. (b)  $-2\pi$ ; (c)  $-2\pi$
18. b.
19. c.
20. d.
21. e.
22. e.
23. a.
24. e.
25. c.
26. d.
27. e.
28. b.