Math 251
Practice Test B for Chapter 11
Answers

1. Limits along any of the coordinate axes are zero, but the limit along the line $x = y = z$ is 1. Hence the limit does not exist.

2. See Example 7, page 637 in your textbook.

3. Easy.

4. $-25/\sqrt{6}$

5. $3x + y - z = 1$.

6. -4

7. Critical points are $(1, 0), (-1, 0), (0, 1), (0, -1)$. These are max, min, saddle, saddle, respectively.

8. $(1/12, 1/12, -1/12)$

9. $7\sqrt{2}$

10. Minimum is 0 and occurs at $(\pm 1/\sqrt{5}, \pm 2/\sqrt{5})$. Maximum is 5 and occurs at $(\pm 2/\sqrt{5}, \mp 1/\sqrt{5})$.