Jason Starr
Fall 2005

18.01 Calculus

Exam 4 1:00pm sharp

Thursday, November 10, 2005

Study Guide for Unit 4

Important definitions. You should know the meanings of the following terms. (All of them are important, so none of them will be bold-faced.)

Term	Lecture	Reference	
Solid of revolution	Lecture 19	§7.3	p. 225
Differentials/infinitesimal element of volume	Lecture 19	§7.3	p. 225
Disk method	Lecture 19	§7.3	p. 227
Slice method	Lecture 19	§7.3	p. 227
Washer method	Lecture 19	§7.3	p. 228
Shell method	Lecture 20	§7.4	p. 231
Average value	Lecture 20	Notes AV	
Parametric equation	Lecture 21	§17.1	p. 586
Arc length	Lecture 21	§7.5	p. 236
Surface of revolution	Lecture 22	§7.6	p. 240

Skills checklist. Be able to do each of the following.

1. Compute the area bounded by given segments of curves.
2. Compute the volume of a solid of revolution by the disk method or washer method.
3. Compute the volume of a solid by the slice method.
4. Compute the volume of a solid of revolution by the shell method.
5. Compute the average value of a given quantity.
6. Compute the arc length of the graph of a function.
7. Compute the arc length of a parametric curve.
8. Compute the surface area of a surface of revolution.
9. Sketch a polar coordinate graph.