

**Math 224**  
**Daily Objectives**  
**Class Session 11**  
**Tuesday, October 2, 2007**

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**4.1: Areas, Volumes, and Cross Products**

- Area of a parallelogram formed by two vectors in  $\mathbf{R}^2$
- Definition of the determinant of a  $2 \times 2$  matrix
- Definition of the cross product of two vectors in  $\mathbf{R}^3$
- Area of a parallelogram formed by two vectors in  $\mathbf{R}^3$
- Volume of a box formed by three vectors in  $\mathbf{R}^3$
- Definition of the determinant of a  $3 \times 3$  matrix
- Properties of the cross product
- The Maple command for cross product is **crossprod(u,v)**