

Fall, 2009

**MATH 3500(H)**  
**PROBLEM SET #3**

T. Shifrin

DUE Wednesday, September 9, 2009.

*Problems to work but not hand in:*

§1.4: #32.

§1.5: #5a, 6a, 7a, 8, 12, 15.

*Problems to turn in:*

WebWork Homework 3 (**due Monday, September 7, at 11 pm sharp**)

§1.4: #22 (3), 33 (2), 34 (4).

§1.5: #4 (3), 10 (3), 13 (3), 17 (5).

**A.** (3) Suppose  $\mathbf{x}, \mathbf{y} \in \mathbb{R}^3$  are nonparallel and  $\mathbf{z} \notin \text{Span}(\mathbf{x}, \mathbf{y})$ . In what direction does the vector  $(\mathbf{x} \times \mathbf{y}) \times (\mathbf{x} \times \mathbf{z})$  point? Prove your assertion. What is its magnitude?

*Challenge problems* (Turn in separately):

§1.5: #3 (3), 18 (3), 19 (4), 20 (2).