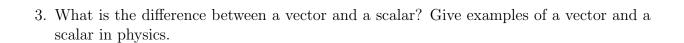
Math 1321

Week 4 Worksheet Due Thursday 09/25

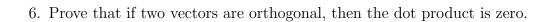
1. Find Taylor series for antiderivative of $\ln(1+x^2)$ at a=0 using known series (i.e. Table 1 on page 613).

2. Find Taylor series for $f(x) = e^{3x}$ at a = 2.



4. If \mathbf{u} is a vector and c is a scalar, how are $c\mathbf{u}$ and \mathbf{u} related. Draw a picture to accompany your answer.

5. Prove that $\mathbf{w} \cdot (\mathbf{u} + \mathbf{v}) = \mathbf{w} \cdot \mathbf{u} + \mathbf{w} \cdot \mathbf{v}$, where $\mathbf{u}, \mathbf{v}, \mathbf{w} \in \mathbb{R}^2$.



7. Prove that
$$|\mathbf{u} \cdot \mathbf{v}| \le |\mathbf{u}| |\mathbf{v}|$$
.

8. Compute the angle between the diagonal of a cube and one of its faces.