

Name \_\_\_\_\_

**PHYS319 Optics**  
**Pre-lab Polarization 1- Malus's Law**

1 What is Malus's Law?

2. Explain the difference between polarized and unpolarized light. Include a diagram.

3. The standard advice in the summer is to avoid being the sun while unprotected between 10 AM & 2 PM.

Assuming that the sun is overhead at noon (an impossibility for us in Mississippi), by what fraction does the intensity of the sun decrease at both 10 AM and 2 PM compared to noon. (This is an simplification of what actually occurs). Assume the sun travels 15 degrees per hour. Use Malus's Law. Show all work.

4. What is Rayleigh Scattering?

5. This is a **“Google” question**. The Lord Rayleigh above won a Nobel prize. What did he win the Nobel prize for and what unit in acoustics was named for him? What is a Rayleigh wave?