Name: _____

Class: _____

Due Date: _____

Physics Topic 39 – Polarization

Answer the following questions. The solutions to this worksheet can be found on the YouTube channel Go Physics Go.

1. Define *unpolarized light.*

2. Define *polarized light.*

3. Define *Malus's Law.*

4. What is a *polarizer*?

5. What is the relationship between the incoming intensity of light and the outgoing intensity of light after the light goes through a polarizer? Give an equation and draw a figure.

6. There are two polarizers. The first polarizer is vertically polarized. The second polarizer is placed behind the first polarizer and is shifted 30 degrees from the first polarizer. Draw a figure of the setup and find the intensity of the light after it goes through both polarizers.

7. What would be the outgoing intensity if two polarizers are placed next to each other and are shifted 90 degrees from each other? Draw a figure of the setup and find the intensity of the light after it goes through both polarizers.

8. There are three polarizers. The first polarizer is vertically polarized. The second polarizer is placed behind the first polarizer and is shifted 45 degrees from the first polarizer. The third polarizer is placed behind the second polarizer and is shifted 45 degrees from the second polarizer. Draw a figure of the setup and find the intensity of the light after it goes through all three polarizers. Show all your work.

9. An unpolarized light passes through two polarizer sheets. If the intensity of the transmitted light is 20% that of the original light, what is the angle between the transmission axes of the two polarizer sheets? Draw a figure and show all your work.