Problem Wk.8.4.1: Eyes have it

Read the handout for Homework 3 before doing this tutor problem.

Light sensor design questions

Assume we construct a voltage divider from the two head photoresistors, with 10 V at one end and 0 V at the other.

Recall that the resistance of a photoresistor **decreases** as the light level **increases**.

1. If we want the output voltage V_s to **increase** when the light level on the **left** photoresistor **increases**, which photoresistor should be connected to the 10 V supply?
   ?
   Left
   Right
2. What are the minimum and maximum values of the output voltage?
   Min: [5] Volts
   Max: [-5] Volts
3. What voltage is produced when the head is pointing directly at the light (assuming identical photoresistors)?
   [0] Volts.
4. How does the output voltage change as the head turns counterclockwise, so that the right eye is brighter?
   ?
   Increase
   Decrease
5. How does the output voltage change as the head turns clockwise, so that the left eye is brighter?
   ?
   Increase
   Decrease

Circuit diagram upload

Upload a PDF file containing your detailed, legible, and complete circuit diagram for your light sensor design. Label which photoresistor is the Left one and which is the Right one, also label the supply voltage and ground.

Please double-check that your file is a valid PDF before uploading. You will be able to check that the file is correctly uploaded.

This problem contains one or more multiple-choice questions. When a given set of choices is used for the first time, all choices are displayed. If there are several related questions, you can assume that the same choices are available for all questions.

6.01SC Introduction to Electrical Engineering and Computer Science

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