General Physics - E&M (PHY 1308) Lecture Notes

Quiz011

SteveSekula, 2 December 2010 (created 2 December 2010)

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Rules for the Quiz:

- You are given **25 minutes** to complete this quiz.
- You are allowed to use a calculator and pen/pencil

Part 1: (10 Points) You are designing a flat mirror for a clothing store. The mirror will allow a person to stand 50.0cm away and see their whole body, down to their feet. The top of the mirror will be 2.0m above the ground, and an average American has a height of 1.7m. You want to make the mirror as cheaply as possible, so you want it to be as short as possible. At what height, h, above the ground does the bottom of the mirror need to be in order for an average person to see their feet? See the picture below for help.

Part 2: (10 Points) You are also designing a concave cosmetic mirror that will allow a person to see an enlarged, upright, virtual image of parts of their face. You want the magnification of the face to be M = 4.0 when their face is 25.0cm from the mirror. What is the focal length that you need to design into this cosmetic mirror?

