2.710 Optics   **Fall '00**
Problem Set #2   Posted Sept. 13, 2001 — Due <u>Wednesday Sept. 19, 2001</u>
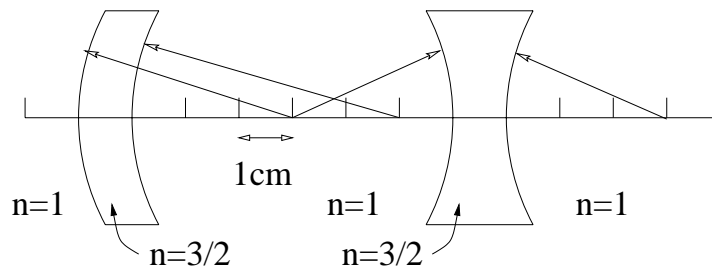
1. Work out the system matrix for the composite element shown below and use it to answer the following questions.

    1.a) What is the optical power of this composite element?

    1.b) If a plane wave is incident from the left, where will it focus?

    1.c) This system is used to image an object at infinity. Is the image real or virtual?

2. Glass with index of refraction of 1.55 is to be used to construct a thin lens that will be planar on the back side. For a power of 2 diopters, what will the front curvature need to be? If instead the lens is made symmetrical with back surface curvature equal to the front surface curvature (in absolute value, but opposite sign), what should be two curvatures be in order to yield the same optical power?