

1. You are making a dress but need more fabric. You take a sample of your fabric to the store and find one that looks exactly the same when held next to the sample you brought. When you get home you discover that the newly purchased fabric doesn't actually match the dress fabric. Give an explanation as to what possibly happened.
2. The *Portable Gray Map* (PGM) image format (described at http://subsurfwiki.org/wiki/Portable_gray_map) is an extremely simple image format.
 - (a) Why must the image dimensions appear in the header?
 - (b) If the maximum grey level is 2047 (i.e., 2048 shades of grey including white) how much memory would you need to store a decoded 800×600 pixel PGM image?
 - (c) One advantage of PGMs is that they are human readable. Name two disadvantages.
3. Explain why a finite aperture camera produce blurry images.
4. Explain the purpose of each of the following transformations in the graphics pipeline: modelling, view, perspective. If you wanted to show the scene from a different point of view, which transform would you need to modify?
5. Given a rotation matrix, how would you determine the axis that it rotates around?
6. What does the following 4×4 homogenized transformation matrix do?

$$\begin{bmatrix} -3 & 0 & 0 & 0 \\ 0 & -3 & 0 & 0 \\ 0 & 0 & -3 & 0 \\ 0 & 0 & 0 & -2 \end{bmatrix}$$