Review for Midterm 2

Bring a calculator, cheat sheet (8.5"x11" front and back).

A RULER for ray tracing, and something to write with.

Here are some particular topics that you might find on the exam:

Spherical Mirrors
Do you have the three rays for the convex and concave mirrors on your cheat sheet? Can you do ray tracing from the object to the mirror for the three special rays? Can you extrapolate where an observer thinks the rays came from? Is the image REAL, VIRTUAL, UPRIGHT, INVERTED, LARGER or SMALLER than the object? Can you relate this to your everyday experience with convex and concave mirrors?

Spherical Lenses
Do you have the three special rays for converging lenses on your cheat sheet. Can you do the ray tracing, predict images, and answer the standard questions? Is the image REAL, VIRTUAL, UPRIGHT, INVERTED, LARGER or SMALLER than the object? Can you relate this to your everyday experience with converging lenses?

Lenses and images
Can you tell me where the rays will focus if the light is coming from a very far away object (Answer: the focal point)? Will the light from a nearby object focus closer to the lens or further than the focal point? Will a lens with a longer focal length project an image further or closer to the lens than one with a shorter focal length? Can you relate this to how a camera focuses? Will a lens with a longer focal length give a larger or smaller image? Can you relate this to the usefulness of lenses with different focal lengths in photography?

Cameras
Can you identify the purpose of a lens, shutter, diaphragm and film in a camera? Can you explain how the aperature size affects the brightness of the image and the depth of field? Do you know what the F-number (f/D) and how it affects the brightness of the image?