**DISTANCE RATIOS**

**Laboratory Experiment #15**

**Procedure:**

Take two exposures of a coin, a small dry bone, and a resolution test pattern, using one-half of a 10 x 12inch 400-speed screen, tabletop, 40 kVp, and distances as listed below. Label each exposure with lead markers.

Alternate Technique = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exposure #1: SID = 20 inches, 0.6 mAs

OID = 2 inches, 0.6 mAs

Exposure #2: SID = 40 inches, 2.5 mAs

OID = 4 inches, 2.5 mAs

**Analysis:**

1. Magnification can be calculated by dividing the *source-object* distance (SOD) into the SID. (Don’t forget to subtract OID from SID to obtain OID.) Calculate the magnification factor for each film and record.

2. Compare the two magnification factors in #1. What do you notice about these?

3. Measure the size of the two coin images and record.

4. In terms of distance ratios, why did you get the answer you did on #3?

5. A relative value for sharpness can be calculated by dividing the OID into the SOD. Calculate the relative sharpness for each film and record.

6. Visually compare the sharpness of detail on the bone images. Are there notable differences?

7. Determine the LP/mm for each film on the resolution test template and record.

8. Is there any difference in sharpness of recorded detail? If so, which one was sharper?

9. In terms of distance ratios, why did you get the answer you did on #8?

10. When considering the control of sharpness or of magnification in the image, can SID, SOD, or OID be considered *separately*?