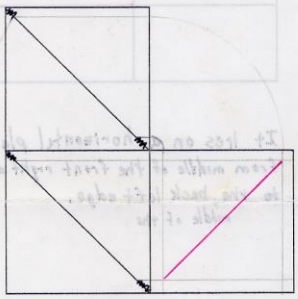
Solutions to Descriptive Geometry Problem Sets

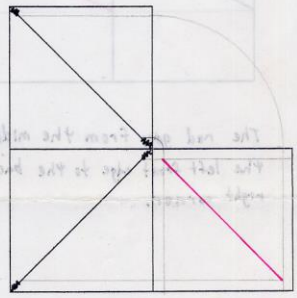
Problem Set A

Problem #1



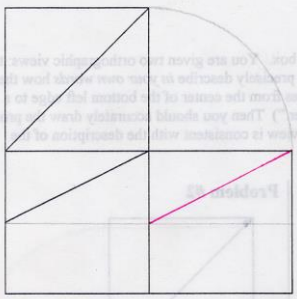
Rod goes from the top, back, left corner to the bottom front right corner.

Problem #2



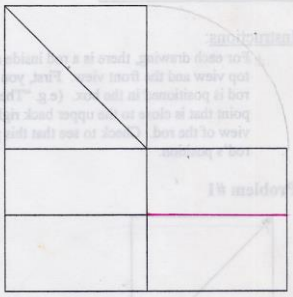
The rod goes from the bottom back left corner to the top front right corner.

Problem #3



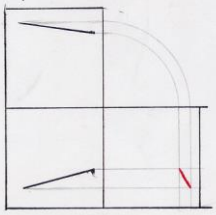
The rod goes from the middle of the left front edge to the back, top, right corner.

Problem #4



It lies on a horizontal plane from middle of the front right edge to the middle of the back left edge.

Problem #5

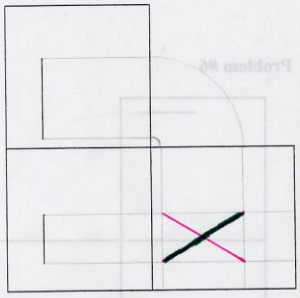


It has nearly perpendicular to the symmetry plane toward the back of the box, slightly below the middle, where the rightmost end has been moved slightly up and forward.

Problem #6

Lies on a frontal plane from ~~the bottom of~~ a point on the bottom face close to the middle of the lower back edge up to a point slightly higher than and close to the middle of the back left edge.

Problem #7

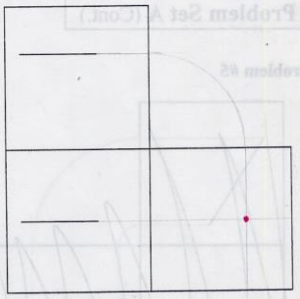


There are two possibilities:

It lies on a symmetry plane ~~either~~ to the left of the center of the box, going either from close to the left bottom front corner, through, and past the center of the plane, (1)

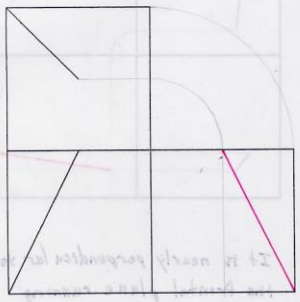
or from halfway up and close to the front face, ~~down~~ and then down toward the back bottom left corner. (2)

Problem #8



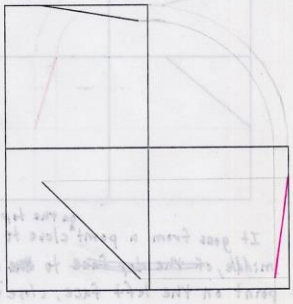
It is perpendicular to the symmetry plane lying about halfway up and slightly toward the back going from ~~just~~ close to the left face to ~~just beyond the center point~~ to the ~~right~~ of the center point.

Problem #9



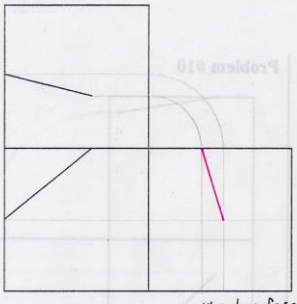
It goes from the center of the top face down to the bottom back left corner.

Problem #10



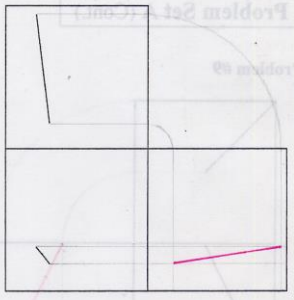
It goes from ~~the~~ a point on the back face that is toward the upper left ~~a~~ corner, to ~~a point~~ close to the bottom right back corner.

Problem #11



It goes from a point on the top face close to the middle, ~~of the top face~~ to ~~the~~ a point on the left face, close to ~~its~~ middle.

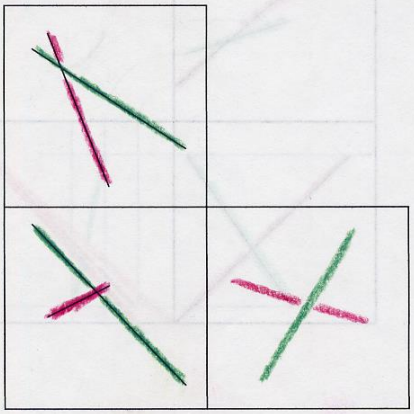
Problem #12



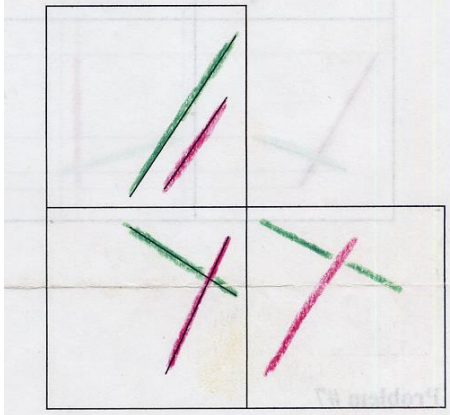
It is nearly perpendicular to the frontal plane running parallel to the bottom left edge.

Problem Set B

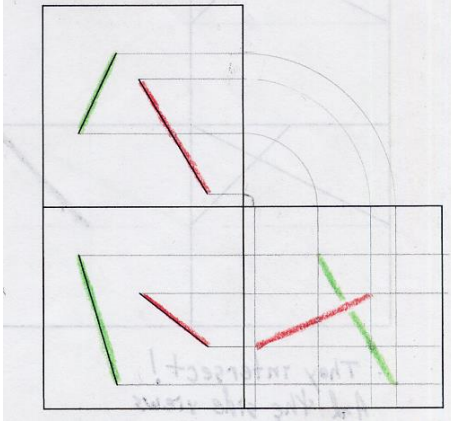
Problem ~~#3~~ 1



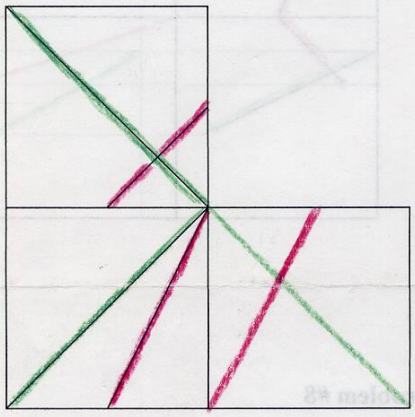
Problem #2



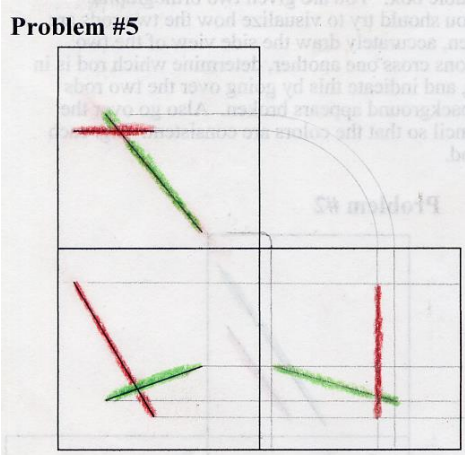
Problem ~~#4~~ 3



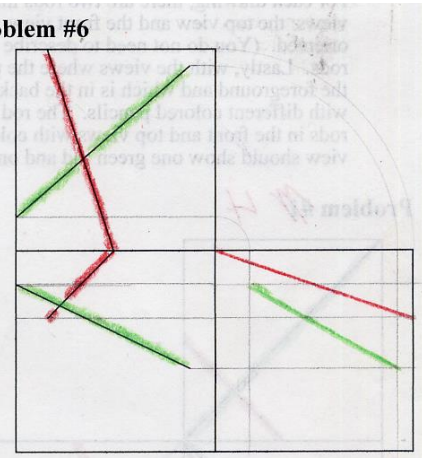
Problem ~~#1~~ 4



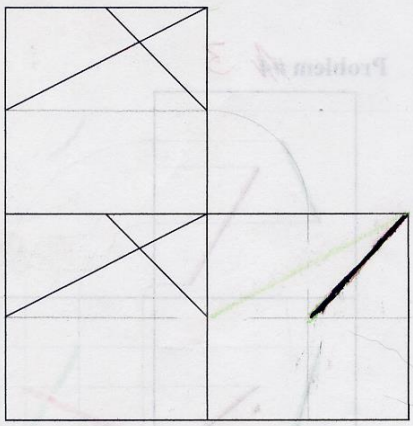
Problem #5



Problem #6

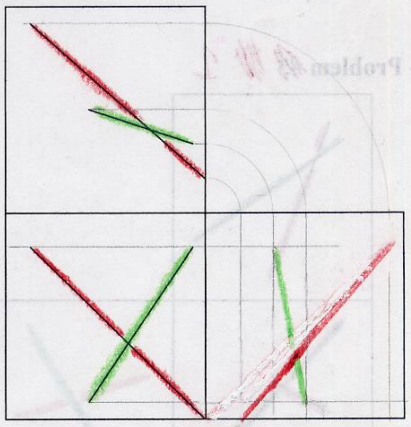


Problem #7



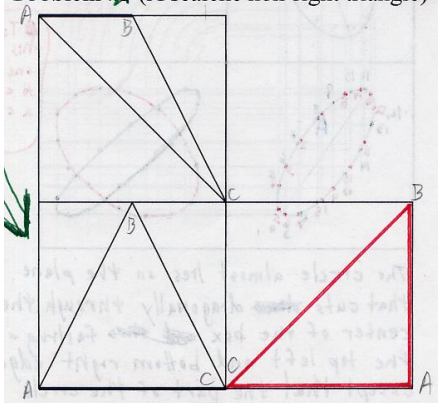
They intersect! And the side views coincide.

Problem #8



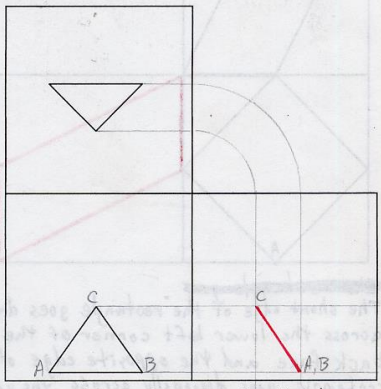
Problem Set C

Problem #1 (A scalene non-right triangle)



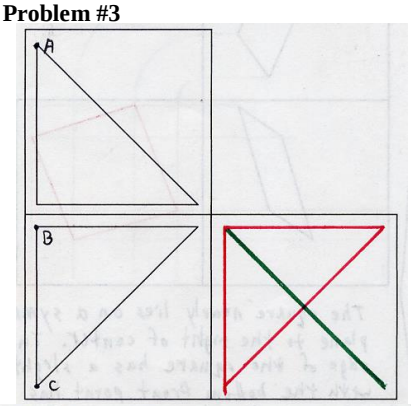
The base lies diagonally across the bottom with the top point in the middle of the top back edge.

Problem #2 (An equilateral triangle)



The base lies perpendicular to the symmetry plane close to the middle of the bottom face with the top point tilted slightly toward the front face. (Side view is a straight line).

Problem #3

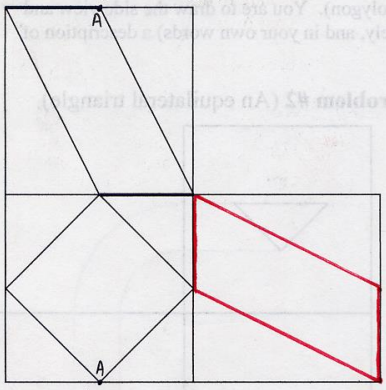


There are 2 possibilities for the side view drawing (in red or green) depending if you have point A correspond to B or C.

Red (A corresponds to B) is an equilateral triangle oriented as when the top left front corner is deeply truncated.

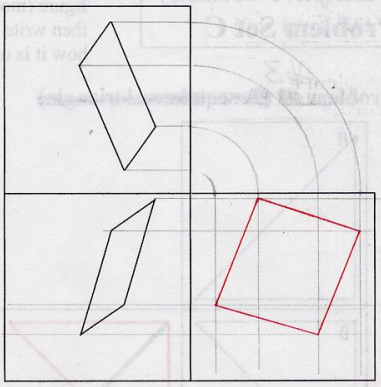
Green (A corresponds to C) This is a right triangle with one edge running close to the top front edge, then an edge running along the diagonal of the left face, then an edge running along the body diagonal from the bottom back left corner up to the front top right corner.

Problem #4 (A rectangle)



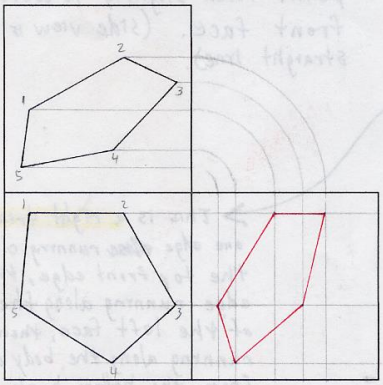
The short edge of the rectangle goes diagonally across the lower left corner of the back face and the opposite edge of the rectangle goes diagonally across the upper right corner of the front side.

Problem #5 (A square)



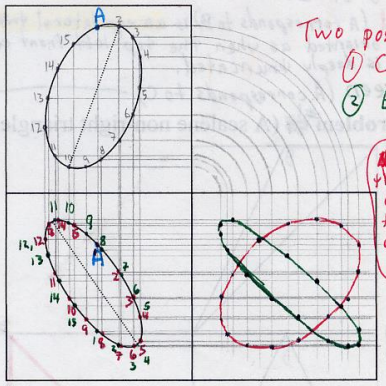
The square nearly lies on a symmetry plane to the right of center. The bottom edge of the square has a slight slope with the bottom front point has been slightly raised and moved toward the right face. The top of the square tilts slightly toward the right face.

Problem #6 (A regular pentagon)



The pentagon nearly lies on a frontal plane with the top edge on a horizontal plane and the upper right edge of the pentagon is slightly pushed back.

Problem #7 (A circle)



Two possibilities:
1. Circle
2. Ellipse

To fix this I specific one point (A) to ensure a circle.

The circle almost lies on the plane that cuts diagonally through the center of the box falling on the top left and bottom right edges, except that the part of the circle closest to the front face has been pushed slightly downward.