ARTIFICIAL INTELLIGENCE 2.

Vision TUTORIAL 2

out: Week of 16/2
Discuss: Week of 23/2

Apply Guzman's heuristic rules to the scene given below to segment it into separate bodies. DRAW LINKS ON THE SCENE.

(1) In a diagram, represent each region by a node and show the strong and weak links between nodes.

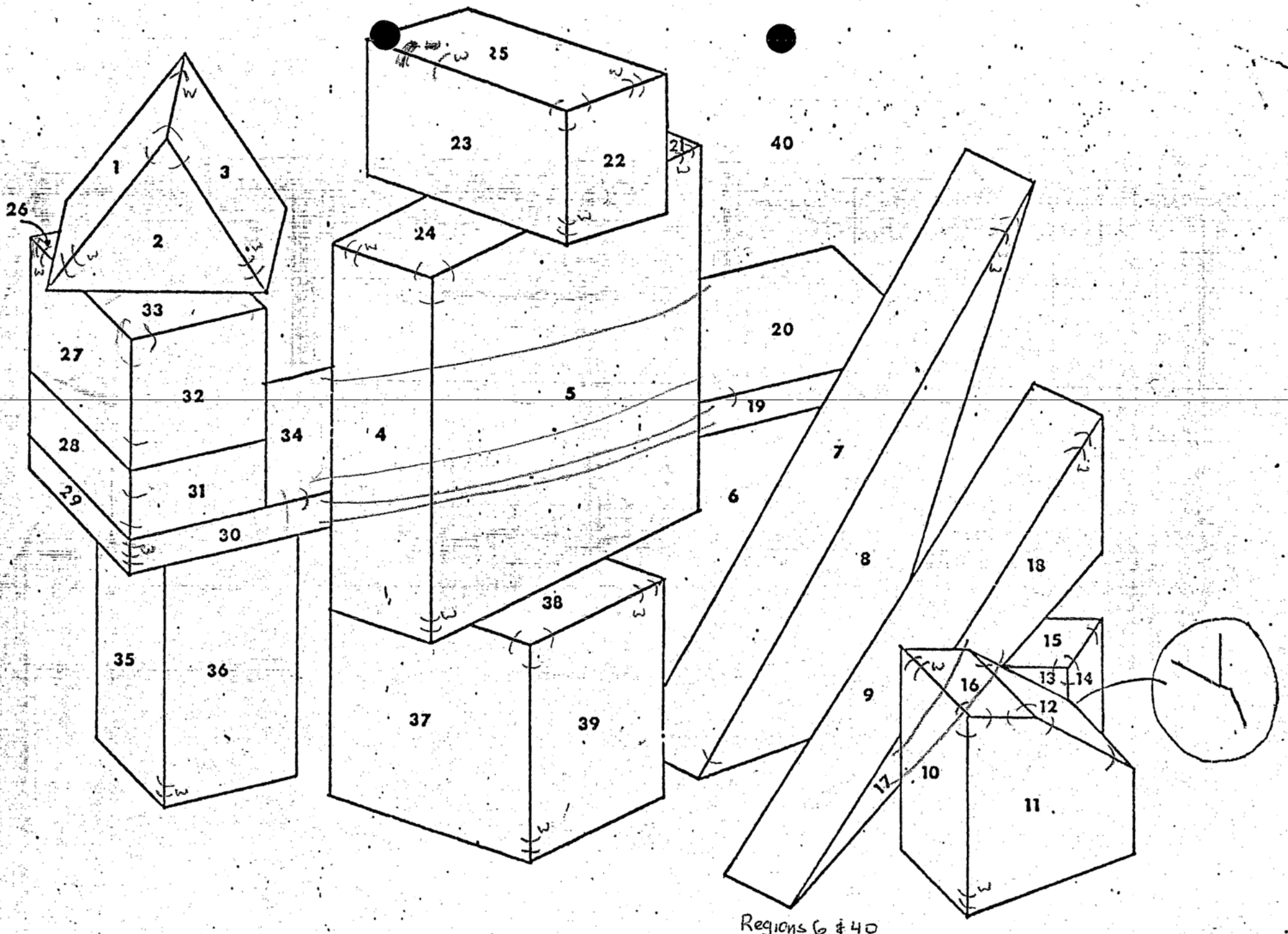
(2) In a diagram, show nuclei formed by combining nodes connected by two or more strong links, repeating Step 2 until no further combining is possible.

(3) In a diagram, show nuclei formed by combining nodes connected by one strong and one weak link.

(4) In a diagram, show nuclei formed by combining with a nucleus a single region node joined by one strong link.

(5) Write down a list of bodies, identified as sets of regions.

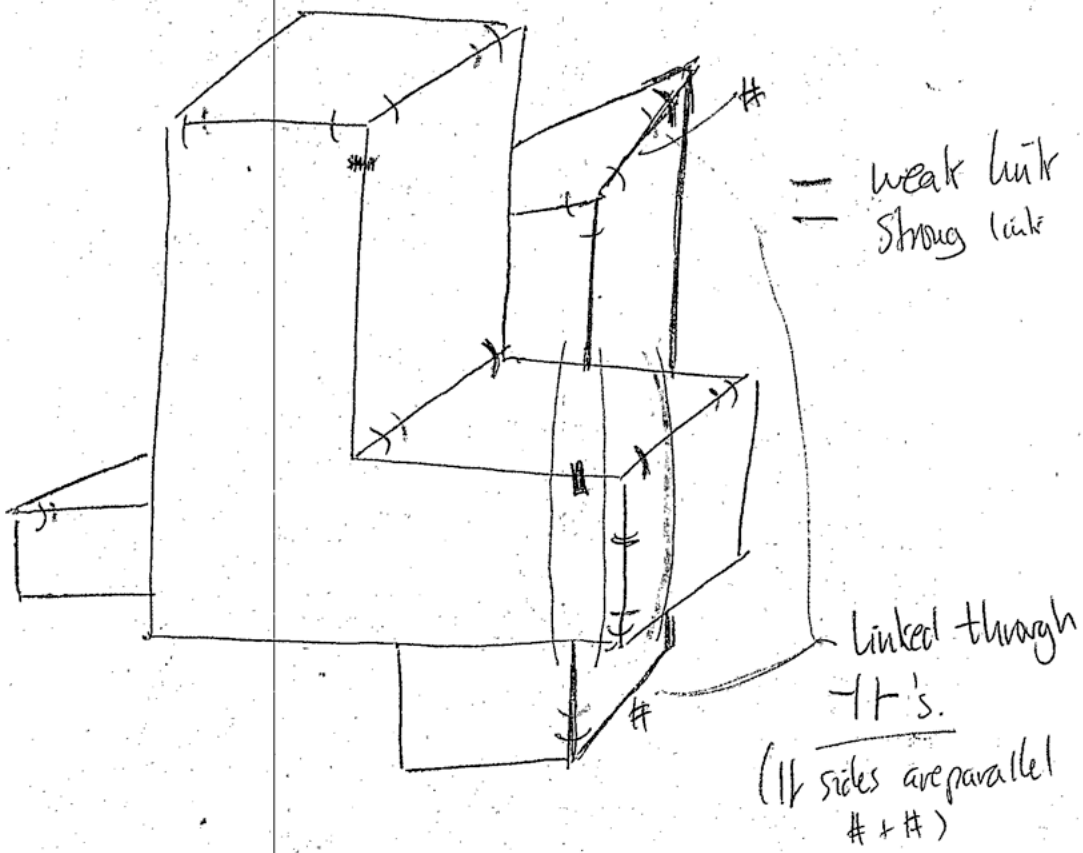
See page 2 for scene.



Regions 6 & 40

MOMO Assume are background.

(1) Follow outline given in tutorial 2 to segment this scene



(2) What is a smoothing function / operator and why is it important? Is a method for averaging at the greylevel values in an nxn template area either/or by increasing low values or decreasing high values. It's important for gathering together information into larger + larger pixel areas. (Thus reducing noise)

(3) Give an example of an edge detecting operator and describe how it is used to detect edges.

Use an n*2 template where the left hand side is set to low values and the right hand side to detect dark values (High values) This template is moved across the whole area of the image.