Negative Space Robot Drawing: Contour Study with Surrounding Shapes

Original task 1 / independent drawing and calculation

Task 1

A robot arm has a joint gap that is 5 mm wide at the shoulder and 3 mm wide at the elbow. The arm is drawn at 1:1 scale. Describe how to draw the joint gap as a negative shape and what to check with a ruler.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

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Original task 2 / independent drawing and calculation

Task 2

An antenna space is a triangle with a 12 mm base and 18 mm height. The robot head is 30 mm wide. Draw the antenna space first, then describe where the robot head contour should touch the triangle.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

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Original task 3 / independent drawing and calculation

Task 3

A robot torso has a rectangular panel space 20 mm by 10 mm. The surrounding area outside the robot is bounded by a paper edge 50 mm from the robot. Classify the panel space and the surrounding area, then state the order of drawing.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

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Original task 4 / independent drawing and calculation

Task 4

A robot drawing uses shading instead of outlines for negative shapes. The robot is 80 mm tall. A joint gap is shaded and measures 2 mm wide. State whether this is valid under the convention and describe one check.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

Full drawing sheet / reusable blank workspace

Reusable full drawing sheet for Tasks 1 to 4. Print another copy when needed. Keep all original task measurements; if a task specifies larger paper, use that paper size.