Contour Line Robot Drawing: Single-Weight Outline Practice

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a robot with a head box 2 squares wide and 2 squares tall, a torso box 3 squares wide and 3 squares tall, and four limb segments each 1 square wide and 2 squares tall. Use joint circles at shoulders, elbows, hips, and knees, and a neck gap of half a square. One square equals a hypothetical 1 cm. What is the total height in squares and in centimeters?

Answer: Total height is 2 + 0.5 + 3 + 2 + 2 = 9.5 squares, which equals a hypothetical 9.5 cm.

Reason: Add the head height, neck gap, torso height, upper leg height, and lower leg height. The arm segments do not add to overall height because they are beside the torso.

Check: Count the squares vertically on your drawing from the top of the head to the bottom of the feet; confirm 9.5 squares. Measure with a ruler if one square is 1 cm.

Task 2

A robot drawing has a head box 3 squares wide, a torso 4 squares wide, and each limb segment 1 square wide. If one square equals a hypothetical 2 cm, what is the total width across the shoulders if the upper arms are attached directly beside the torso with no gap?

Answer: Total width is 4 + 1 + 1 = 6 squares, which equals a hypothetical 12 cm.

Reason: The torso width plus one upper arm width on each side gives the shoulder width. Joint circles do not add width if they sit within the segment outlines.

Check: Measure across the widest point of the shoulders on your drawing and count squares; confirm 6 squares or 12 cm using the hypothetical scale.

Task 3

Draw a robot variant where the head is 2 squares wide and 2 squares tall, the torso is 2 squares wide and 4 squares tall, and each limb segment is 1 square wide and 3 squares tall. Use a neck gap of 1 square. What is the total height in squares?

Answer: Total height is 2 + 1 + 4 + 3 + 3 = 13 squares.

Reason: Add head height, neck gap, torso height, upper leg height, and lower leg height. The longer limb segments increase the total height compared with the first exercise.

Check: Count squares from top to bottom on the drawing; confirm 13 squares. Check that the neck gap is exactly 1 square.

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Original tasks 4 / complete keys

Task 4

A student draws a robot with a head box, torso box, and limb rectangles but uses a thicker line around the head and thinner lines elsewhere. They also leave a gap between the torso and one upper arm that is not at a joint circle. Identify two fixes that make the drawing meet the single-weight contour convention.

Answer: Fix one: redraw the head outline with the same pressure and tool as the rest so all contours have equal visual weight. Fix two: close the gap by extending the upper arm outline to the shoulder joint circle or by drawing the joint circle at that connection.

Reason: Single-weight contour requires consistent line weight everywhere. Gaps are allowed only at joints by the chosen convention, so a non-joint gap breaks continuity.

Check: Hold the drawing at arm's length to compare line weight across all contours. Trace each segment endpoint to confirm it ends at a joint circle or closes on another segment.

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Source rubric / reflection

- [ ] All contours use a single, even line weight with no shading or double-drawn emphasis.
- [ ] Head and torso are closed geometric shapes with a consistent neck joint gap or circle.
- [ ] Limb segments are closed rectangles or trapezoids that end at joint circles or hand/foot blocks.
- [ ] Joint convention is applied consistently at every joint.
- [ ] No non-contour details such as facial features or decorative panels are added.
- [ ] Proportions are checkable by grid squares or ruler measurements with consistent units.
- [ ] Valid alternatives are accepted: different segment lengths, joint circle sizes, or hand/foot block shapes, provided the single-weight contour convention is maintained.

Reflection: What did you check, what did you change, and what will you try next?