How to Draw a Six-Pack with Contour: Muscle Outline Study

Original tasks 1, 2, 3 / complete keys

Task 1

A practice box is 9 grid squares tall and 6 grid squares wide. Divide it into three equal rows and two equal columns. Find row height, x-height, and block width, then verify totals.

Answer: Row height = 3 squares; x-height = 1.5 squares; block width = 3 squares. Check: 3 × 3 = 9 squares tall; 2 × 3 = 6 squares wide.

Reason: Divide total height by 3 for rows, then by 2 for x-height. Divide total width by 2 for block width. Multiply back to verify.

Check: Confirm 3 times row height equals total height and 2 times block width equals total width.

Task 2

A rectangle is 10 cm tall and 6 cm wide. Use three equal rows and two equal columns. State row height, x-height, and block width in centimeters, and verify totals.

Answer: Row height = 10 ÷ 3 ≈ 3.33 cm; x-height ≈ 1.67 cm; block width = 6 ÷ 2 = 3 cm. Check: 3 × 3.33 ≈ 10 cm tall; 2 × 3 = 6 cm wide.

Reason: Keep units consistent in centimeters. Round only for reporting, but verify with the unrounded multiplication.

Check: Multiply row height by 3 and block width by 2; compare to the original dimensions.

Task 3

A practice box is 8 grid squares tall and 8 grid squares wide. After dividing into three equal rows, one row is drawn 3 squares tall instead of the calculated value. Identify the error and state the correct row height and x-height.

Answer: Correct row height = 8 ÷ 3 ≈ 2.67 squares; x-height ≈ 1.33 squares. The drawn row of 3 squares is too tall; three such rows would total 9 squares, exceeding the 8-square height.

Reason: Compare the drawn row height to the calculated value and check the total by multiplication.

Check: Multiply the drawn row height by 3 and compare to total height; adjust to the calculated value.

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Original tasks 4 / complete keys

Task 4

A rectangle is 12 grid squares tall and 10 grid squares wide. Divide into three equal rows and two equal columns. Then describe how to adjust the internal outlines so they are interrupted at the centerline without changing the arithmetic.

Answer: Row height = 4 squares; x-height = 2 squares; block width = 5 squares. Check: 3 × 4 = 12 tall; 2 × 5 = 10 wide. To interrupt internal outlines, stop each muscle outline short of the vertical centerline by a small consistent gap, keeping the outer contour continuous.

Reason: Arithmetic placement is unchanged; only the drawing of internal lines is adjusted to show separation.

Check: Verify row height, x-height, and block width by multiplication, then visually confirm that internal outlines do not cross the centerline.

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Source rubric / reflection

- [ ] Outer contour is continuous and drawn with a heavier line than internal outlines.
- [ ] Six muscle blocks are present and arranged in three rows of two.
- [ ] Row heights are equal and verified by arithmetic.
- [ ] Left and right block widths are equal and verified by arithmetic.
- [ ] X-height midline is marked for each row.
- [ ] Internal outlines are interrupted at the centerline to show separation.
- [ ] No shading is used; separation relies on line weight and spacing.
- [ ] Numerical values are labeled as hypothetical examples.
- [ ] Valid alternatives in muscle shape are accepted if structural checks pass.

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