Super Hornet Orthographic Drawing: Plan and Profile Practice

Original task 1 / complete key

Task 1

A hypothetical reference gives length 20 m and span 14 m. Your plan panel is 20 cm wide at 1 cm to 1 m. Block the fuselage and wings, then state the target span in centimeters and the target ratio.

Answer: Target span is 14 cm. Target ratio is 14 divided by 20, which is 0.70.

Reason: Scale 1 cm to 1 m means 20 m becomes 20 cm and 14 m becomes 14 cm. Ratio is span divided by length.

Check: Measure the drawn span with a ruler. Divide by 20 cm. Compare to 0.70; within about ten percent is acceptable.

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Original task 2 / complete key

Task 2

In profile view, a hypothetical fuselage length is 16 cm and tail height is 4 cm. Calculate the tail-height-to-length ratio. If your drawn tail height is 3 cm, is it within ten percent of the target?

Answer: Target ratio is 4 divided by 16, which is 0.25. Drawn ratio is 3 divided by 16, about 0.19. The difference is about 0.06, which is more than ten percent of 0.25 (0.025), so adjust the tail height upward.

Reason: Ten percent of 0.25 is 0.025. A drawn ratio of 0.19 differs by 0.06, exceeding the tolerance.

Check: Re-measure tail height and length, recalculate ratio, and compare to 0.25.

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Original task 3 / complete key

Task 3

You draw a plan view with fuselage length 18 cm and span 12 cm. Your reference ratio is 0.72. Calculate your drawn ratio and state whether it is within ten percent of the target.

Answer: Drawn ratio is 12 divided by 18, about 0.67. Ten percent of 0.72 is 0.072, so acceptable range is about 0.648 to 0.792. The drawn ratio 0.67 is within range.

Reason: Subtract and add ten percent of the target to form the range, then compare.

Check: Measure again and confirm the ratio falls between 0.648 and 0.792.

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Original task 4 / complete key

Task 4

A plan view shows a wing block sweeping back 5 cm over a horizontal run of 10 cm. Calculate the sweep ratio (horizontal run divided by vertical drop). If you change the horizontal run to 8 cm with the same 5 cm drop, what is the new ratio?

Answer: First ratio is 10 divided by 5, which is 2.0. New ratio is 8 divided by 5, which is 1.6.

Reason: Sweep ratio compares horizontal run to vertical drop. Keep units consistent in centimeters.

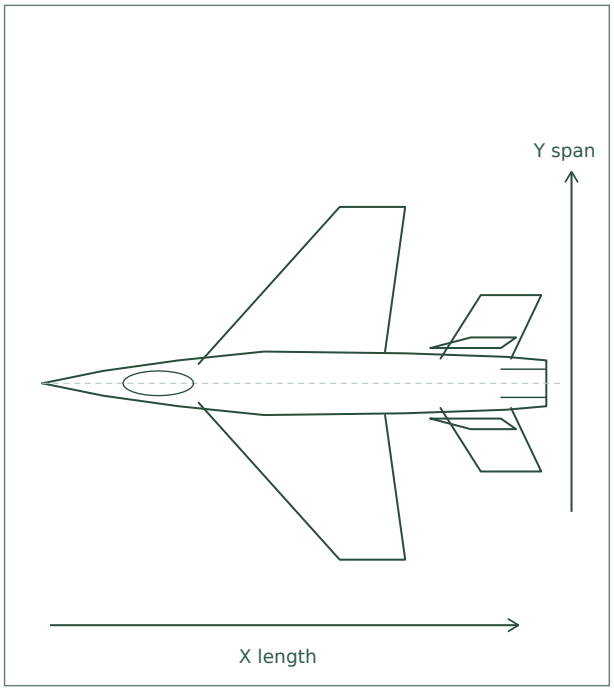
Check: Measure the horizontal run and vertical drop on the drawing, divide, and compare to the stated values.

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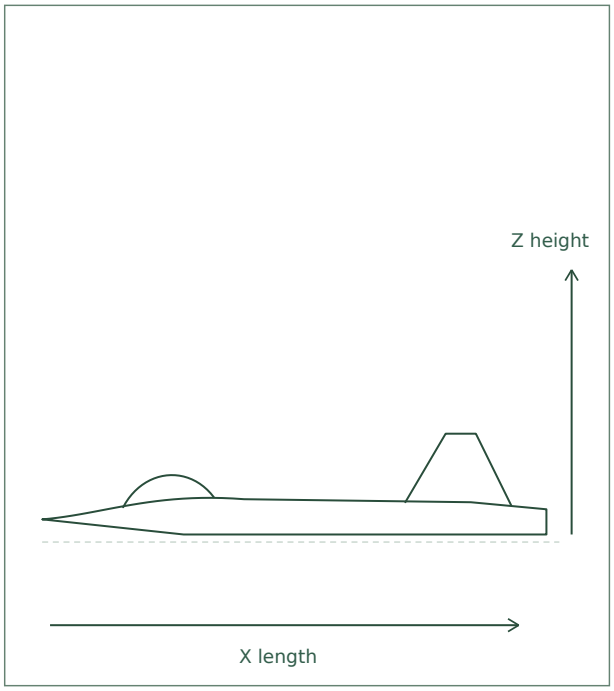
Task 1 / answers

Simplified Super Hornet orthographic studies / hypothetical teaching dimensions only

PLAN / X length, Y span



PROFILE / X length, Z height



PRINT 1:3 / labels are full hypothetical source sizes / L20cm, span14cm

Plan and profile use identical horizontal nose/tail X coordinates within their separate panels.

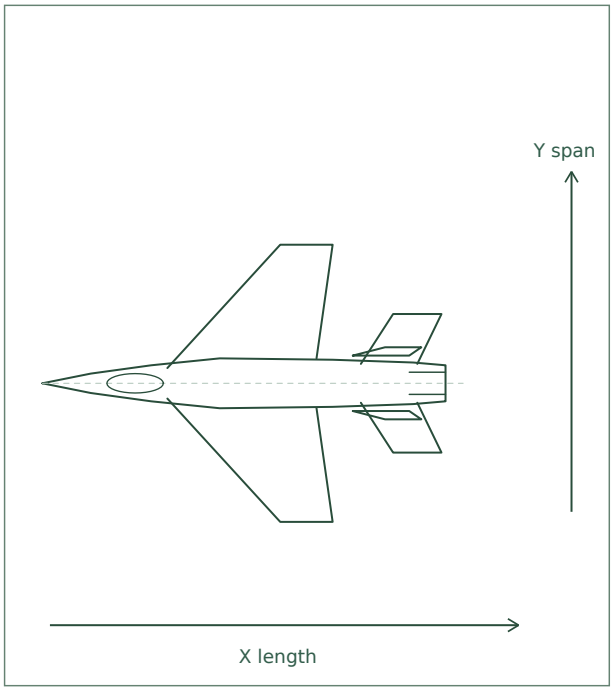
Task1: hypothetical20m length and14m span at1cm/m become20cm and14cm. Target14/20=0.70. This compact answer diagram is explicitly printed1:3: ruler dimensions are labelled centimetres divided by3, not full20cm on this A4 sheet.

Super Hornet Orthographic Drawing: Plan and Profile Practice

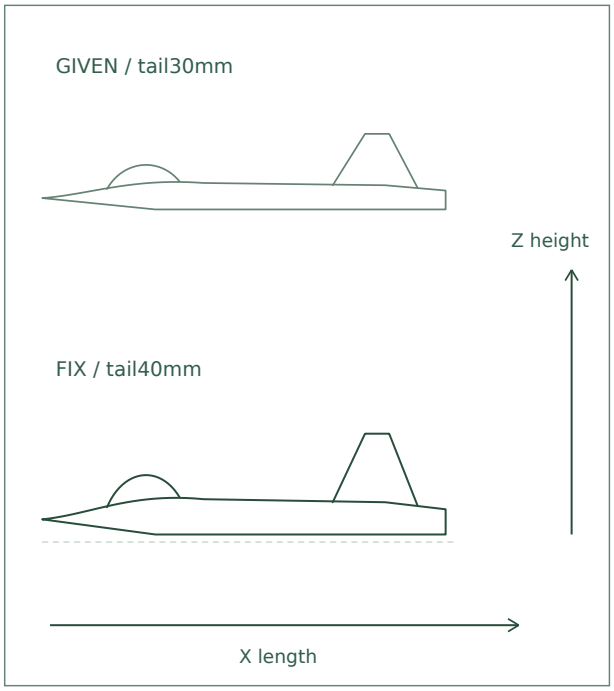
Task 2 / answers

Simplified Super Hornet orthographic studies / hypothetical teaching dimensions only

PLAN / X length, Y span



PROFILE / X length, Z height



PRINT 1:3 / labels are full hypothetical source sizes / L16cm, span11cm

Plan and profile use identical horizontal nose/tail X coordinates within their separate panels.

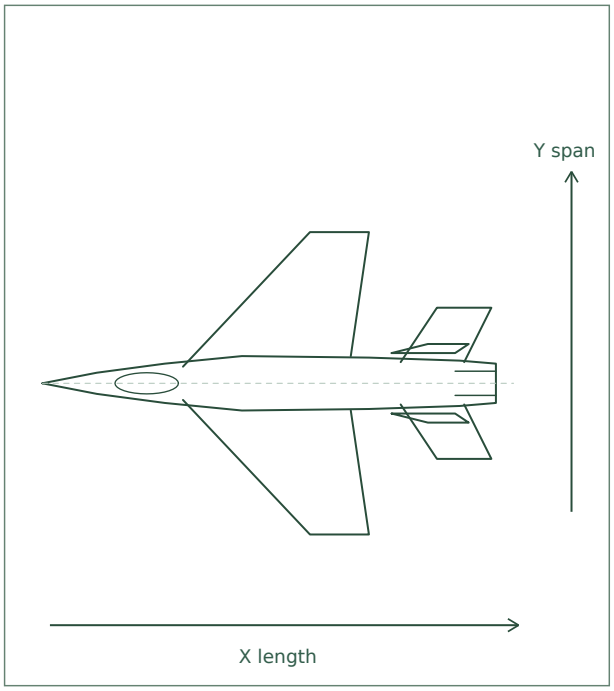
Task2: target tail40mm / length160mm=0.25. The grey GIVEN tail30mm gives0.1875; the difference0.0625 exceeds0.025. The separate lower FIX raises the tail to40mm. All figures use the stated1:3 print scale.

Super Hornet Orthographic Drawing: Plan and Profile Practice

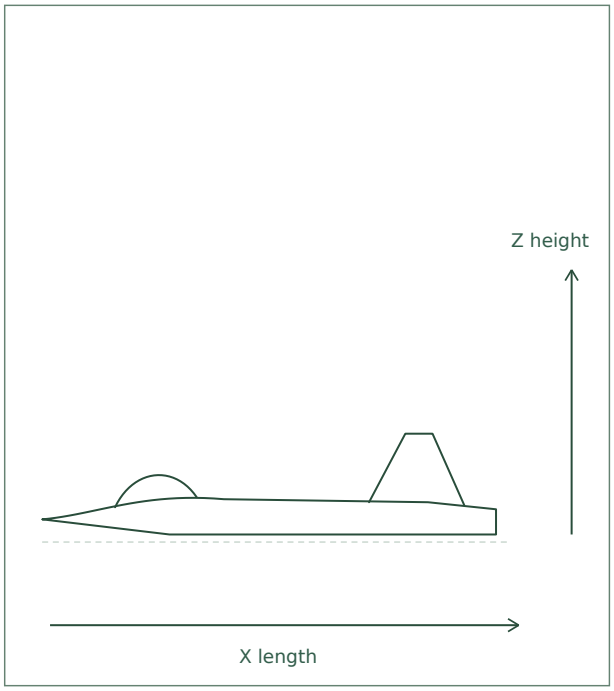
Task 3 / answers

Simplified Super Hornet orthographic studies / hypothetical teaching dimensions only

PLAN / X length, Y span



PROFILE / X length, Z height



PRINT 1:3 / labels are full hypothetical source sizes / L18cm, span12cm

Plan and profile use identical horizontal nose/tail X coordinates within their separate panels.

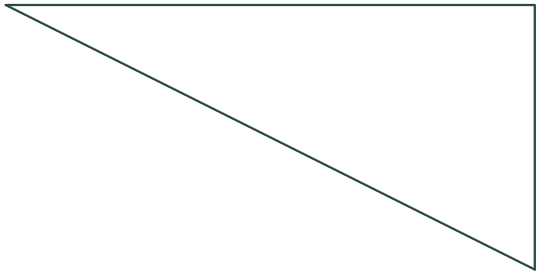
Task3: 120/180=2/3=0.66667. For target0.72, ten-percent bounds are0.648 to0.792;2/3 lies inside. This is a hypothetical classroom tolerance, not an aircraft or printer standard.

Super Hornet Orthographic Drawing: Plan and Profile Practice

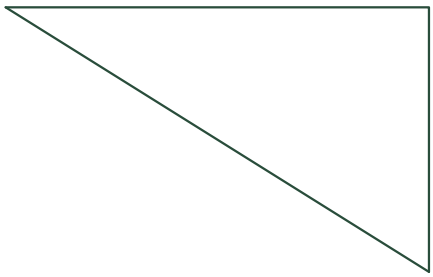
Task 4 / answers

Simplified Super Hornet orthographic studies / hypothetical teaching dimensions only

run 10 cm / drop5 cm / ratio 2



run 8 cm / drop5 cm / ratio 1.6



Task4 defines horizontal run / vertical drop: 100/50=2.0 and80/50=1.6. These isolated triangles are the requested wing-block ratio detail, not a substitute for the complete aircraft plan/profile on other pages. Printed linear lengths are0.7 times source labels.

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Source rubric / reflection

- [ ] Plan and profile panels are clearly separated and labeled with axes and scale.
- [ ] Major masses are blocked before curves are refined.
- [ ] Line convention is applied consistently: solid visible, dashed hidden, centerline symmetry.
- [ ] Span-to-length ratio is within about ten percent of the stated reference.
- [ ] Lettering is legible and consistent; any style is acceptable.
- [ ] Check table is present with measured values and calculated ratio.

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