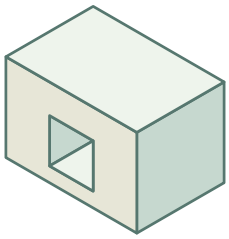
Draw Orthographic Engineering Views

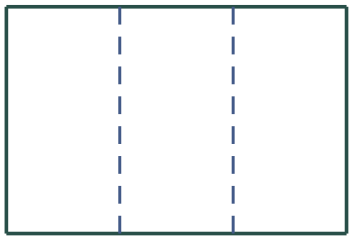
Answer | Task 1 of 4 | LETTER

Original prompt

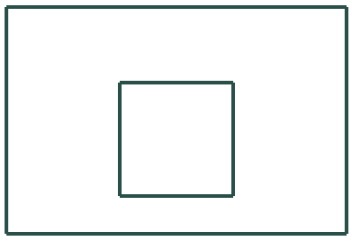
Task 1: Draw front, top and side views of a plain rectangular block with a single square through-hole from front to back.



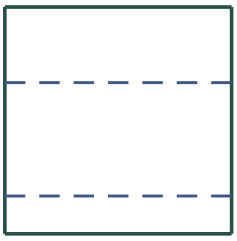
Square bore



Top



Front



Right side

Answer

Front view: solid block outline with a solid square for the hole. Top view: solid block outline with two dashed lines marking the hole sides. Side view: solid block outline with two dashed lines at hole height.

Reasoning

The hole opening faces the front, so it is solid there and hidden in the other two views. The block outline is solid in every view.

Check

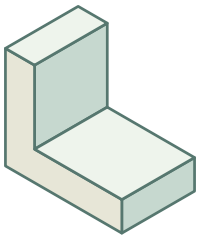
Verify the hole is solid in the front view and dashed in the top and side views, and that its position matches across all three views.

Draw Orthographic Engineering Views

Answer | Task 2 of 4 | LETTER

Original prompt

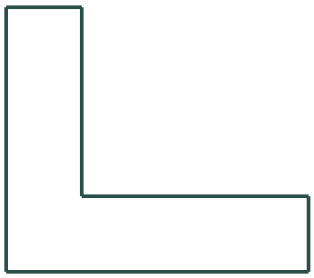
Task 2: Draw front, top and side views of an L-shaped bracket made from a vertical plate joined to a horizontal base.



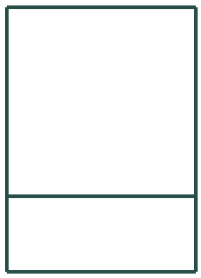
Left upright and base



Top



Front



Right side

Answer

The front view is a solid L. From above, the rectangular plan is divided by the visible upright edge. The right view is rectangular, with a solid horizontal line at the lower base height.

Reasoning

The upright and base are joined and have the same front-to-back depth. From the right, the projecting base face and the upright share one rectangular outline; their height break is visible.

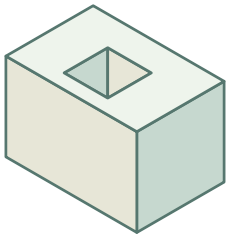
Check

Transfer the lower base height from the front into the right view. Check that the dividing line in the top view lies at the upright's width.

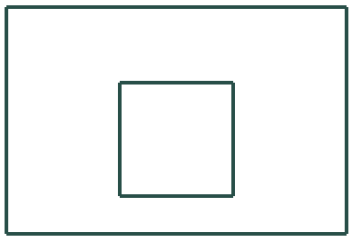
Draw Orthographic Engineering Views

Original prompt

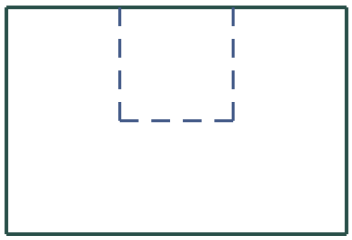
Task 3: Draw front, top and side views of a block with a blind rectangular pocket cut into its top face.



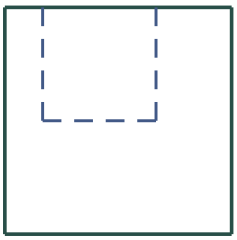
Blind top pocket



Top



Front



Right side

Answer

Front view: solid block outline with dashed lines showing the pocket depth. Top view: solid block outline with a solid rectangle for the pocket opening. Side view: solid block outline with dashed lines showing the pocket depth.

Reasoning

The pocket opening faces up, so it is solid in the top view and hidden in the front and side views. The pocket does not pass through, so its depth is shown as dashed lines in the front and side views.

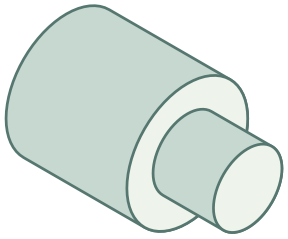
Check

Confirm the pocket opening is solid only in the top view, and that the dashed depth lines in the front and side views align with the pocket position.

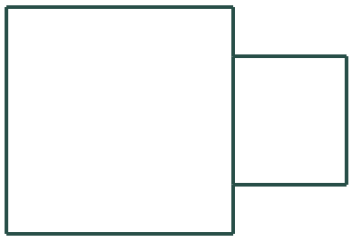
Draw Orthographic Engineering Views

Original prompt

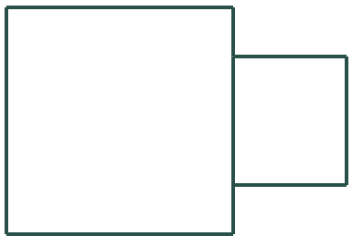
Task 4: Draw front, top and side views of a stepped shaft (a cylinder with a smaller-diameter section at one end).



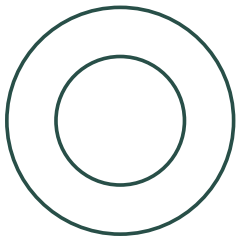
Right-facing stepped shaft



Top



Front



Right side

Answer

Front and top show the change between the two diameters and a solid line at the shoulder. The right view is end-on. It shows a small solid circle for the near end and a larger solid circle for the visible shoulder boundary.

Reasoning

The shaft axis lies along the width direction of the front view. Its diameters project as heights in the front and as widths across the axis in the top. Looking along the shaft from the right projects the two diameters as concentric circles.

Check

Check that the transitions align between front and top. Compare both diameters with the two circles in the right view.