Realistic Tree Drawing: Bark, Branch Taper, and Leaf-Mass Shading

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a trunk 24 mm wide at baseline and 16 mm wide at the first branch. Add five bark ridges that curve around the trunk edges. State the trunk taper ratio.

Answer: Trunk taper ratio is 24 divided by 16 equals 1.5. Five ridges curve around the edges with tighter spacing near edges.

Reason: The ratio checks that the trunk narrows consistently; ridge curvature shows cylindrical form.

Check: Measure baseline and first-branch widths in the same unit, divide, and confirm five ridges with edge curvature.

Task 2

Draw a branch from 10 mm at base to 2 mm at tip with a midpoint width of 6 mm. At a fork, the parent is 10 mm wide; child bases are 6 mm and 5 mm. Check whether the children are slightly narrower than the parent.

Answer: Branch taper ratio is 10 divided by 2 equals 5, and midpoint 6 mm is between 10 mm and 2 mm. Child sum is 6 plus 5 equals 11 mm, which is wider than the 10 mm parent, so reduce child bases to about 5 mm and 4 mm.

Reason: Midpoint must lie between base and tip; child sum should be slightly less than parent width at the fork.

Check: Compare midpoint to base and tip, then add child base widths and compare to parent width.

Task 3

Shade one leaf mass using three tones. The mass is 40 mm wide and 30 mm high. State where the light, middle, and dark tones go, and give one check that the mass reads as a group.

Answer: Light tone on the upper light-facing side, middle tone across the center, dark tone at the lower edge and under overlaps. Check by squinting: the mass should read as one shape with three visible values.

Reason: Grouped shading uses value placement to show volume rather than individual leaves.

Check: Confirm three distinct values are visible and the mass boundary reads as one irregular shape.

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Original tasks 4 / complete keys

Task 4

Combine a trunk 20 mm wide at baseline and 14 mm at first branch with two branches tapering from 8 mm to 2 mm. Place leaf masses over branch tips. State one arithmetic check and one placement check.

Answer: Trunk taper ratio is 20 divided by 14, approximately 1.43; branch taper ratio is 8 divided by 2 equals 4. Placement check: every branch tip ends at or inside a leaf-mass boundary.

Reason: Arithmetic checks keep taper consistent; placement check keeps leaf masses connected to branch structure.

Check: Divide widths in the same unit for ratios, then trace each branch tip to its leaf-mass boundary.

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Source rubric / reflection

- [ ] Bark ridges follow trunk form and vary in spacing without a flat repeating pattern.
- [ ] Branch widths taper from base to tip, with midpoint width between base and tip width.
- [ ] Leaf masses use three distinct tone values and read as grouped volumes.
- [ ] Baseline and midline are marked, and all measurements use one consistent unit.
- [ ] Valid alternative ridge patterns are accepted when proportions and relationships remain consistent.

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