Draw a Jungle Tree: Layered Canopy and Hanging Vines

Original tasks 1, 2, 3 / complete keys

Task 1

A drawing has a back canopy layer at 14 cm height, a middle layer at 11 cm, and a front layer at 8 cm on a hypothetical sheet. Each layer overlaps the one behind it by 2 cm. What is the visible height of the back layer above the middle layer?

Answer: 3 cm

Reason: Subtract the middle layer height from the back layer height: 14 cm minus 11 cm equals 3 cm. The 2 cm overlap affects the covered portion, not the height difference between layer tops.

Check: Re-read the heights and subtract in the same order; confirm the result is positive and uses centimetres.

Task 2

Two vines start at support points 6 cm apart. Vine A hangs 9 cm and Vine B hangs 5 cm. If both tips are measured from the same baseline, how much lower is Vine A's tip than Vine B's tip?

Answer: 4 cm

Reason: Compare the hanging lengths: 9 cm minus 5 cm equals 4 cm. The support-point distance does not change the difference in tip depth when measured from the same baseline.

Check: Subtract the shorter vine length from the longer one and confirm the units are centimetres.

Task 3

A front leaf cluster is drawn with a baseline at 7 cm and a midline at 9 cm. A back cluster has a baseline at 13 cm and a midline at 16 cm. Using the x-height convention, what is each cluster's x-height, and which is larger?

Answer: Front x-height is 2 cm; back x-height is 3 cm; the back cluster is larger.

Reason: X-height is midline minus baseline. Front: 9 minus 7 equals 2 cm. Back: 16 minus 13 equals 3 cm. Since 3 cm is greater than 2 cm, the back cluster is larger.

Check: Recalculate each subtraction and compare the two results; confirm both are positive.

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Original tasks 4 / complete keys

Task 4

A tree drawing uses three canopy layers and four vines. The back layer has 6 leaf clusters, the middle has 5, and the front has 4. If each vine carries 2 small leaf clusters, how many leaf clusters are in the drawing in total?

Answer: 23 leaf clusters

Reason: Add canopy clusters: 6 plus 5 plus 4 equals 15. Add vine clusters: 4 vines times 2 clusters equals 8. Then 15 plus 8 equals 23.

Check: Add the canopy total and vine total separately, then combine; recount the vine multiplication to confirm 8.

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Source rubric / reflection

- [ ] Trunk and main branches are clear and support the canopy.
- [ ] Three canopy layers are distinguishable by height and overlap.
- [ ] Leaf clusters follow the x-height convention or a clearly stated valid alternative.
- [ ] Vines have clear support points and readable hanging paths.
- [ ] Layer contrast and gaps keep the tree from looking flat.
- [ ] The drawing focuses on the tree rather than a full forest scene.

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