FIND AND REPAIR THE CAUSE

Repairing and editing vector artwork

Diagnose paths before combining, offsetting and reshaping vector artwork.

Software practice and review

Keep **No Machine** selected and stay **disconnected** for project exercises. Supplied operation values are software examples, not tested material recipes. Keep originals and save your own work separately.



A continuous-looking outline or one object row does not prove path closure.

1. In **duplicates-practice.lzrproj**, select all and use Edit > Cleanup > Delete Duplicates. Two duplicates are removed, leaving one tag outline and one circle.

2. In **open-paths-practice.lzrproj**, Select Open Shapes finds gaps of 0.2 and 0.8 mm. A 0.50 mm threshold previews one closure; 1.00 mm previews both.

3. Compare Move Ends Together and Join With Line. Inspect the changed endpoints or bridging segment before accepting a tolerance.

4. In **join-practice.lzrproj**, Auto-Join combines four touching objects into one object whose subpaths remain open in the demonstrated release. One Outliner row does not prove closure.

5. Use **break-apart-practice.lzrproj** separately. Break Apart exposes independent compound-path pieces; moving one should leave the other in place.

6. In **burns-wrong-practice.lzrproj**, close the known open Fill path, remove one duplicate and the off-page fragment, then inspect both layer and operation Output.

DRAW AND EDIT NODES

Draw and edit nodes

1. In **drawing-practice.lzrproj**, Draw clicks make straight segments. Escape commits an open line. Click-drag creates curve handles; clicking the first point closes the leaf.

2. In **nodes-practice.lzrproj**, select the heart and use Node Edit. Move an anchor to move the shape; drag a curve handle to change curvature while its anchor stays put.

3. In **house-practice.lzrproj**, insert a midpoint on the top edge, then move it up for a five-node closed house. Roof height may differ from the example.

4. Hover shortcuts: I inserts at the pointer, M at a segment midpoint, D deletes a node, C makes a corner, S smooths and L straightens the incoming curve.

5. B breaks a path at a node. The separate **broken-path-example.lzrproj** deliberately shows an open result.

6. Trim normally attempts healing. Option/Alt-click gives a raw trim. **trim-answer.lzrproj** contains four open paths despite a continuous-looking outer boundary.

COMBINE, OFFSET AND RESHAPE

Combine, offset and reshape

1. In **boolean-practice.lzrproj**, select the rectangle and large circle, leaving the small hole unselected. Weld makes a 110 x 50 mm outer tag.

2. For the hole, select the retained outside first, then the small circle, and use Boolean Subtract. The answer is a closed compound path with a 16 mm opening.

3. Boolean Assistant previews Union, Subtract, Intersection, Weld and Exclude before Apply. Its Exclude answer keeps the outside regions and removes overlap.

4. In **offset-word-practice.lzrproj**, BEAM is already outlines. Add a 3 mm Outward offset with Round corners, leaving Delete original off. Inspect joined letters and narrow gaps.

5. Use Corner Radius 3 mm for the rectangle in **radius-practice.lzrproj**. Use Radius Tool R3 on compatible marked path corners.

6. Try Warp Selection with four points and Deform Selection with sixteen from separate originals. Compare outline changes; exact pointer distances are not the exercise target.

INDEPENDENT REPAIR AND ANSWER CHECKS

Independent repair and answer checks

Complete the burns-wrong, Boolean tag and offset-word cases in separate files. Preserve the supplied starters.

☐ In burns-wrong, keep only the intended closed fill shape and circle. Temporarily enable operations for disconnected Preview, then restore operation Output off before saving.

☐ Check the Boolean opening and closed compound outline. Union, Intersection and Subtract intentionally give different results.

☐ Offset word: about 134.25 x 35.79 mm originally and 140.25 x 41.79 mm with the new outside outline. Keep both and inspect small gaps.

☐ Use the chapter comparison projects for Draw, Node Edit, Trim, Assistant, radius, Warp and Deform. Some examples are intentionally open or alternative results.

Why can Auto-Join still leave a shape unsuitable for Fill?

What does a large closing tolerance risk changing?

Which original will you keep before destructive editing or conversion?

FILES AND COMPARISONS

Files and comparisons

Adding and changing nodes
Folder adding-and-changing-nodes. **broken-path-example.lzrproj**, **house-answer.lzrproj**, **house-answer.png**, **house-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Boolean assistant
Folder boolean-assistant. **boolean-assistant-answer.lzrproj**, **boolean-assistant-answer.png**, **boolean-assistant-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Closing open paths
Folder closing-open-paths. **open-paths-answer.lzrproj**, **open-paths-move-ends-answer.lzrproj**, **open-paths-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Deleting duplicate paths
Folder deleting-duplicate-paths. **duplicates-answer.lzrproj**, **duplicates-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Drawing lines and curves
Folder drawing-lines-and-curves. **drawing-answer.lzrproj**, **drawing-answer.png**, **drawing-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Use the comparison after your attempt. Check the specified dimensions, settings and object structure.

FILES AND COMPARISONS

Files and comparisons

Editing nodes
Folder editing-nodes. **nodes-answer.lzrproj**, **nodes-answer.png**, **nodes-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Joining and breaking apart
Folder joining-and-breaking-apart. **break-apart-answer.lzrproj**, **break-apart-practice.lzrproj**, **join-answer.lzrproj**, **join-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Looks right burns wrong
Folder looks-right-burns-wrong. **burns-wrong-answer.lzrproj**, **burns-wrong-answer.png**, **burns-wrong-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Offsets
Folder offsets. **offset-answer.lzrproj**, **offset-answer.png**, **offset-practice.lzrproj**, **offset-word-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Rounding corners
Folder rounding-corners. **radius-answer.lzrproj**, **radius-answer.png**, **radius-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Use the comparison after your attempt. Check the specified dimensions, settings and object structure.

FILES AND COMPARISONS

Files and comparisons

Trimming shapes
Folder trimming-shapes. **trim-answer.lzrproj**, **trim-answer.png**, **trim-healed-example.lzrproj**, **trim-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Warping and deforming
Folder warping-and-deforming. **deform-example.lzrproj**, **warp-answer.lzrproj**, **warp-answer.png**, **warp-practice.lzrproj**. Keep this chapter's inputs and comparisons together.

Weld and booleans
Folder weld-and-booleans. **boolean-answer.lzrproj**, **boolean-answer.png**, **boolean-practice.lzrproj**, **intersection-demo.lzrproj**, **union-demo.lzrproj**, **weld-answer.lzrproj**. Keep this chapter's inputs and comparisons together.

Use the comparison after your attempt. Check the specified dimensions, settings and object structure.