Draw a Simple Car: Body, Wheels, and Windows

Original tasks 1, 2, 3 / complete keys

Task 1

A body zone is 10 cm wide. Wheel centers are 2 cm from each end. What is the distance between the wheel centers?

Answer: 6 cm.

Reason: The left center is 2 cm from the left edge, and the right center is 2 cm from the right edge. The space between centers is 10 cm minus 2 cm minus 2 cm, which equals 6 cm.

Check: Add the two end distances to the center distance: 2 + 6 + 2 = 10 cm, matching the body zone width.

Task 2

Two wheels have diameters of 2.5 cm and 3 cm. Are they equal? If not, what is the difference?

Answer: No, they are not equal. The difference is 0.5 cm.

Reason: Equal wheels must have the same diameter. Subtract the smaller diameter from the larger: 3 cm minus 2.5 cm equals 0.5 cm.

Check: Compare the diameters directly; if the difference is not zero, redraw using one template.

Task 3

A window is drawn 0.3 cm from the body outline, but the planned frame gap is 0.5 cm. How much farther should the window move inward?

Answer: 0.2 cm inward.

Reason: Subtract the current gap from the planned gap: 0.5 cm minus 0.3 cm equals 0.2 cm.

Check: Measure the new gap after moving the window; it should read 0.5 cm.

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Original tasks 4 / complete keys

Task 4

A wheel center is marked 1 cm above the baseline, and the wheel diameter is 2 cm. Will the wheel touch the baseline? Explain using the radius.

Answer: Yes. The wheel touches the baseline because the radius is 1 cm and the center is 1 cm above the baseline, so the bottom of the wheel is exactly at the baseline.

Reason: Radius equals diameter divided by 2: 2 cm divided by 2 equals 1 cm. The bottom of the wheel is the center height minus the radius: 1 cm minus 1 cm equals 0 cm above the baseline, so it touches.

Check: Measure from the wheel center to the baseline and compare with the radius; they should be equal.

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Source rubric / reflection

- [ ] Body outline is a single clear shape with a roof curve and rounded corners.
- [ ] Two wheels are equal in size and aligned on the wheel line.
- [ ] Wheels touch or nearly touch the baseline.
- [ ] At least one window sits inside the body outline with a visible frame gap.
- [ ] Body outline does not cross the wheel centers.
- [ ] Construction plate is light and does not compete with final lines.
- [ ] Valid alternatives are accepted: one or two windows, slight front slope, and optional small details kept small, inside the body outline, and aligned to the wheel line or window line.

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