Cadillac Drawing: Body Proportions and Wheel Placement

Original tasks 1, 2, 3 / complete keys

Task 1

A side-view drawing uses a wheel diameter of 3 cm. The body length is 16.5 cm and the wheelbase is 10.5 cm. Convert both to wheel-diameter units and state whether they are within the starting ranges.

Answer: Body length is 16.5 ÷ 3 = 5.5 units. Wheelbase is 10.5 ÷ 3 = 3.5 units. Both are within the starting ranges of about 5.5 to 6 units for length and about 3.5 to 4 units for wheelbase.

Reason: Divide each measurement by the wheel diameter to express it in units. Compare the results to the lesson's starting ranges.

Check: Re-measure the wheel diameter and the two distances on the drawing. Confirm the divisions and that the results fall inside the stated ranges.

Task 2

A drawing has a wheel diameter of 2.5 cm and a roof height of 8 cm above the ground. Convert the roof height to units and decide whether it is too tall, too low, or within the starting range.

Answer: Roof height is 8 ÷ 2.5 = 3.2 units. The starting range is about 2.5 to 3 units, so 3.2 units is slightly too tall and should be lowered or justified intentionally.

Reason: Divide the roof height by the wheel diameter. Compare the result to the roof-height range in the lesson.

Check: Measure the roof height from the ground line to the roof top, divide by the wheel diameter, and confirm the result is above 3 units.

Task 3

A side-view Cadillac drawing has a wheelbase of 9 cm and a wheel diameter of 2.4 cm. The front wheel center is 4 cm from the front body limit. Convert the wheelbase and the front overhang to units and check whether the front overhang is plausible for a Cadillac-style sedan.

Answer: Wheelbase is 9 ÷ 2.4 = 3.75 units. Front overhang is 4 ÷ 2.4 ≈ 1.67 units. A front overhang of about 1.5 to 2 units is plausible for a Cadillac-style sedan, so this is acceptable.

Reason: Express both distances in wheel-diameter units. The wheelbase is within the starting range, and the front overhang is a reasonable fraction of the body length.

Check: Measure the wheelbase and front overhang, divide each by the wheel diameter, and confirm the wheelbase is about 3.5 to 4 units and the overhang is about 1.5 to 2 units.

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Original tasks 4 / complete keys

Task 4

A drawing uses a wheel diameter of 2 cm. The beltline is 3.6 cm above the ground and the roof height is 5.8 cm above the ground. Convert both to units and state whether the cabin height between beltline and roof is reasonable.

Answer: Beltline is 3.6 ÷ 2 = 1.8 units. Roof height is 5.8 ÷ 2 = 2.9 units. Cabin height is 2.9 − 1.8 = 1.1 units. This is reasonable because the beltline is within about 1.5 to 1.8 units and the roof is within about 2.5 to 3 units, leaving a cabin height of about 1 unit.

Reason: Convert both heights to units, then subtract the beltline from the roof height to find the cabin height. Compare each value to the lesson's starting ranges.

Check: Measure the beltline and roof height from the ground line, divide by the wheel diameter, and confirm the beltline is about 1.5 to 1.8 units and the roof is about 2.5 to 3 units.

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Source rubric / reflection

- [ ] Wheel placement: both wheels sit on the ground line with centers on the baseline and a small gap inside the arches.
- [ ] Body proportions: body length, wheelbase, roof height, and beltline are consistent with the chosen wheel-diameter unit.
- [ ] Cadillac silhouette: the drawing shows a long hood, crisp beltline, and upright cabin that read as a Cadillac-style sedan.
- [ ] Line quality: guide lines are light and final lines are clear; labels, if any, are legible and outside the car body.
- [ ] Valid alternatives: different proportions are acceptable if they are intentional, consistent, and clearly explained by the unit system.

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