Draw an Off-Road Side-by-Side with Roll Cage and Suspension

Original tasks 1, 2 / complete keys

Task 1

Draw a side-by-side with a body box 80 units long and 30 units tall. Place four wheels 40 units in diameter on a ground line. Add a rear hoop and a front hoop connected by two roof tubes. Show one suspension arm per wheel.

Answer: A drawing with a rectangular body box above the ground line, four wheels touching the ground, two cage hoops joined by two roof tubes, and one suspension arm from each hub to the chassis.

Reason: The body box sets the chassis size, the ground line keeps wheels level, and the hoops and roof tubes create a readable roll cage. One arm per wheel is enough to show suspension placement.

Check: Check that all four wheel bottoms touch the ground line, the two hoops are the same height, and each suspension arm connects a hub to the chassis.

Task 2

Draw a side-by-side with a body box 120 units long and 50 units tall. Use wheels 60 units in diameter. Add a rear main hoop, a front hoop, two roof tubes, and two diagonal braces at the rear. Show two suspension arms per wheel and a small coil spring.

Answer: A drawing with a larger body box, four large wheels on the ground line, a complete cage with rear and front hoops, roof tubes, rear diagonals, and two suspension arms per wheel with coil springs.

Reason: The larger box and wheels create a stable stance. Diagonal braces strengthen the cage visually, and two arms per wheel show a clear suspension linkage.

Check: Compare wheel diameter to body height, confirm the diagonals connect the rear hoop to the chassis, and check that left and right suspension arms mirror each other.

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Original tasks 3, 4 / complete keys

Task 3

Draw a side-by-side with a body box 90 units long and 35 units tall. Place wheels 45 units in diameter. Add a seat, steering wheel, headlights, and a front bumper. Use the x-height convention for small bolt heads on the cage joints.

Answer: A drawing with the specified body box and wheels, a seat and steering wheel inside the cage, headlights and a bumper at the front, and small bolt heads sized using the x-height convention.

Reason: Details make the vehicle readable, while the x-height convention keeps small features consistent. Letter styles vary, so bolt heads may be circles or short marks.

Check: Check that the seat is inside the cage, the steering wheel is in front of the seat, and small features are similar in size across the drawing.

Task 4

Draw a side-by-side with a body box 110 units long and 45 units tall. Use wheels 55 units in diameter. Add a rear hoop, front hoop, roof tubes, and two suspension arms per wheel. Then check your drawing against the rubric and list one improvement.

Answer: A complete drawing matching the given dimensions, with a readable cage, four grounded wheels, mirrored suspension arms, and a written improvement such as darkening the cage tubes or adjusting wheel spacing.

Reason: The rubric provides a structured check. Listing an improvement shows reflective practice and helps refine the drawing.

Check: Use the rubric items one by one: body box, cage tubes, wheels on ground, suspension mirroring, x-height details, and clean construction lines.

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Source rubric / reflection

- [ ] Body box is rectangular and clearly represents the chassis and cabin.
- [ ] Roll cage is drawn as separate connected tubes with at least two hoops and roof tubes.
- [ ] Four wheels touch the ground line and have visible hubs.
- [ ] Suspension arms connect each hub to the chassis and mirror left to right.
- [ ] Small details follow the x-height convention, and valid alternative letter styles are accepted.
- [ ] Construction lines are light or erased, and the final cage and suspension are readable.

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