Cyclist Figure Drawing: Bike Frame, Posture, and Pedal Contact

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a side-view cyclist with wheel radius 20 mm and wheelbase 80 mm. Place the bottom bracket 30 mm from the rear wheel center. Mark the frame anchors and draw the frame loop. State one check you performed.

Answer: A frame loop connecting two equal 20 mm wheels, a bottom bracket 30 mm from the rear center, and closed tubes. Check: the frame loop returns to its start without gaps.

Reason: The anchors set the geometry; the loop check confirms the frame is closed and the wheelbase matches the stated 80 mm.

Check: Measure both radii (should be 20 mm) and trace the frame loop for gaps or crossings.

Task 2

A rider has thigh 35 mm and shin 33 mm. The pedal is forward. Draw the leg so the ball of the foot meets the pedal. Where should the knee be relative to the hip?

Answer: The knee should be forward of the hip when the pedal is forward. The foot meets the pedal at the ball of the foot.

Reason: Pedal position drives knee position; forward pedal means forward knee. Foot contact at the ball keeps the shin line ending at the ankle.

Check: Measure thigh and shin (35 mm and 33 mm) and confirm the foot's ball touches the pedal spindle.

Task 3

Draw a rider whose arm from shoulder to hand is 40 mm. The handlebar is 50 mm from the shoulder anchor. What should you adjust, and why?

Answer: Move the shoulder or handlebar anchor so the arm length matches the distance; do not stretch the arm to 50 mm.

Reason: Stretching breaks limb consistency. Adjusting an anchor preserves the measured arm length and keeps the posture coherent.

Check: Measure the arm segments after adjustment; they should total 40 mm and the hand should wrap the bar.

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Original tasks 4 / complete keys

Task 4

Using a defined line convention, draw a cyclist with one visible leg and one dashed hidden leg. State your convention and one rubric check you used.

Answer: Convention: solid for visible edges, dashed for hidden leg. Check: the visible foot's ball meets the pedal spindle and the frame loop closes.

Reason: A defined convention makes the drawing readable; the rubric check confirms contact and frame closure.

Check: Verify the dashed leg does not cross solid frame lines except at anchors, and measure the visible foot contact.

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Source rubric / reflection

- [ ] Frame loop closes without unintended crossings.
- [ ] Both wheel radii are equal or the inequality is intentional and noted.
- [ ] Spine line connects hip, shoulder, and head coherently.
- [ ] Arm segments are consistent and the hand wraps the handlebar.
- [ ] Foot contact is at the ball of the foot on the pedal spindle.
- [ ] Knee position agrees with pedal position.
- [ ] Line convention is defined and used consistently.
- [ ] Measurements are recorded and checked with simple arithmetic.

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