Isometric Kitchen Drawing: Cabinet, Counter, and Appliance Layout

Original tasks 1, 2, 3 / complete keys

Task 1

A base cabinet is 80 cm wide, 60 cm deep, and 90 cm high. Using 1 interval = 10 cm, state the number of intervals along each axis and describe how to draw the box.

Answer: Width 8 intervals, depth 6 intervals, height 9 intervals. Draw a floor parallelogram using 8 width intervals and 6 depth intervals, raise vertical lines 9 intervals, and connect the top corners.

Reason: Each dimension is divided by the unit of 10 cm. The box is drawn by combining the width and depth intervals on the floor plane, then raising the height intervals vertically.

Check: Confirm that 80 divided by 10 is 8, 60 divided by 10 is 6, and 90 divided by 10 is 9; then check that every edge is parallel to one of the three axes.

Task 2

A kitchen run is 300 cm long. It contains a 60 cm cabinet, a 60 cm stove, and a 70 cm refrigerator. How much counter length remains? Show the arithmetic.

Answer: 60 plus 60 plus 70 equals 190 cm. 300 minus 190 equals 110 cm remaining.

Reason: Add the widths of the placed items along the run, then subtract the total from the run length.

Check: Reverse the subtraction: 190 plus 110 equals 300, so the remaining length is correct.

Task 3

An upper cabinet is 35 cm deep and a base cabinet is 60 cm deep. Using 1 interval = 5 cm, state the depth intervals for each and explain why the upper cabinet is shallower.

Answer: Upper cabinet depth is 7 intervals; base cabinet depth is 12 intervals. The upper cabinet is shallower so it reads as a wall cabinet and leaves space above the counter.

Reason: Divide each depth by 5 cm. The difference in depth is a design choice shown in the drawing, not a manufacturing standard.

Check: Confirm that 35 divided by 5 is 7 and 60 divided by 5 is 12; check that both depth lines are parallel to the depth axis.

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Original tasks 4 / complete keys

Task 4

A refrigerator is 70 cm wide, 65 cm deep, and 170 cm high. Using 1 interval = 10 cm, round each dimension to the nearest whole interval and state the rounded box dimensions.

Answer: Width 7 intervals, depth 6.5 rounded to 7 intervals, height 17 intervals. The rounded box is 7 by 7 by 17 intervals.

Reason: Divide each dimension by 10 cm, then round to the nearest whole interval because the grid uses whole intervals. State the rounding so the drawing remains checkable.

Check: Confirm that 70 divided by 10 is 7, 65 divided by 10 is 6.5 which rounds to 7, and 170 divided by 10 is 17; note the rounding on the drawing.

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Source rubric / reflection

- [ ] All straight construction lines are parallel to one of the three axes: vertical, 30-degree left, or 30-degree right.
- [ ] A single unit is stated and used consistently on all three axes.
- [ ] Base cabinet, countertop, and upper cabinet are drawn as separate isometric boxes with visible edges only.
- [ ] Appliance boxes use the same axes and unit as the cabinets.
- [ ] The sum of widths along the run is shown and does not exceed the run length.
- [ ] Labels and a three-axis key make the drawing self-checking.
- [ ] Valid alternative: a different unit or rounded interval is acceptable if it is stated and used consistently.

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