Reading Molecular Shape From End Distances

Scoring guide · one credit per question · review written work against each rubric

Reading Molecular Shape From End Distances

Question 1

Choice (2)

The bond lengths in Q sum to 2.0 units, but its outer atoms are only 1.7 units apart. The two bonds cannot point straight in opposite directions.

Question 2

Both have two 1.0-unit bonds, but the endpoint distance changes from 2.0 to 1.7 units. P can be straight while Q must be bent. The angle can change while the bond lengths stay fixed.

Question 3

P has equal arrows pointing in opposite directions, so they cancel. In Q the angle is less than 180°, so equal arrows do not cancel completely.

Question 4

Show two equal-length bonds meeting at the center at a bent angle. Label the two outer atoms and mark the separation between them as 1.7 units. Accept either orientation.