Drawing Two Places for Oxygen in a Chain

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

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Question 1

In each model the C–O bond connects the O–H group to an unbroken three-carbon chain. Erasing it leaves one piece with three carbons and one with zero carbons. The measurement does not show which carbon had the oxygen attached.

Question 2

Choice (2)

In Q the O lies between a one-carbon group and a two-carbon group. Erasing either C–O bond separates one carbon from the other two.

Question 3

The first result rules out Q, whose C–O cut leaves one and two carbons. The second result fits P. In P the O-bearing carbon is at an end, so cutting the bond next to it leaves one carbon with O. In R the O-bearing carbon is in the middle and keeps one other carbon after either adjacent cut.

Question 4

Show three connected carbons with O bonded to the middle carbon. Mark either C–C bond next to the middle carbon. The piece holding O contains two carbons. Accept equivalent orientations and condensed or skeletal bond models.