

Solutions

Each answer shows the steps, then the **result**.

2.1

- chain; positional; functional group isomerism

2.2

- a carbon atom bonded to four different groups

3.1 B

- The π bond in the $C=C$ prevents rotation

3.2 B

- The second carbon in $CH_3CHBrCH_2CH_3$ has four different groups

3.3

(a)

- cis — both CH_3 groups on the same side of the $C=C$; trans — on opposite sides

(b)

- but-2-ene has a different group (H and CH_3) on each double-bond carbon, so cis/trans is possible; but-1-ene has two H atoms on the end carbon, so the groups can be swapped without making a new isomer

3.4

- yes; the second carbon is bonded to four different groups (CH_3 , OH, H, COOH), so it is a chiral centre