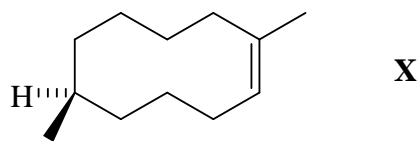


- Compound **X** undergoes an addition reaction on treatment with hydrogen gas in the presence of a palladium on carbon catalyst to form a mixture of cyclic alkanes.

Marks
6



Clearly draw all possible products that can form from this reaction, taking care to represent the stereochemistry of the products clearly.

Clearly label each isomer drawn above as either chiral or achiral (not chiral).

Circle one of the isomers and provide a full systematic name for this compound below. Make sure you include all relevant stereochemical descriptors.

THE REMAINDER OF THIS PAGE IS FOR ROUGH WORKING ONLY.