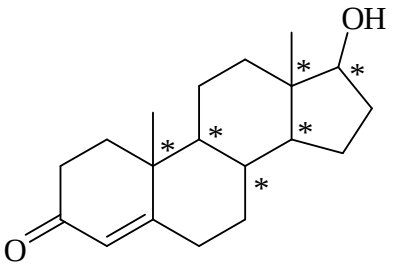
Marks 8

The structure of testosterone, an important male hormone, is shown below.



testosterone

Give the molecular formula of testosterone. **$C_{19}H_{28}O_2$**

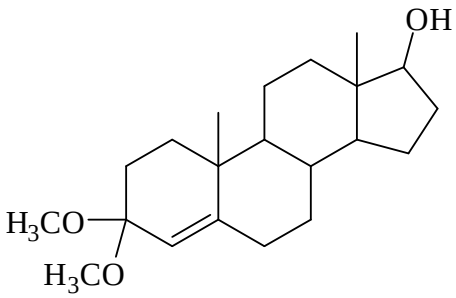
Identify the functional groups present in testosterone.

conjugated ketone, alkene, alcohol (secondary)

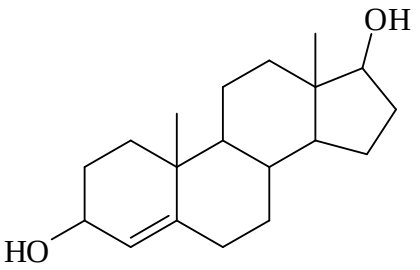
How many stereogenic (chiral) centres are there in testosterone? **6 (marked above)**

Draw the constitutional formula of the product formed when testosterone is treated with the following reagents.

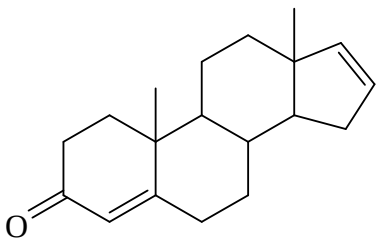
excess methanol / HCl



$LiAlH_4$ in dry ether; then $H^{\oplus}$ / H_2O



concentrated H_2SO_4 / heat



H_2 / Pd catalyst