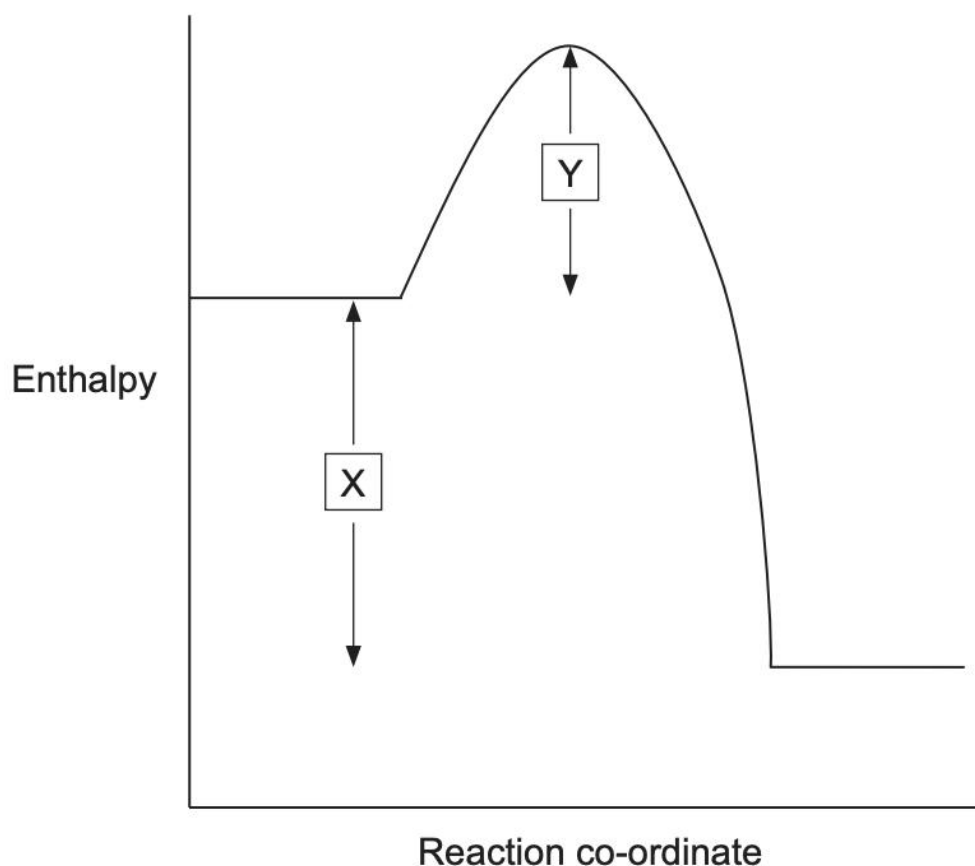


21. Consider the following energy profile diagram for a reversible chemical reaction.



Which of the following statements about this reaction are correct?

- (i) The reaction mixture will cool as the reaction proceeds.
  - (ii) Y will reduce in magnitude if a catalyst is used.
  - (iii) The activation energy for the reverse reaction is  $X - Y$ .
  - (iv)  $\Delta H$  for the reverse reaction is  $+X$ .
  - (v) The forward reaction is likely to be faster than the reverse reaction.
- 
- (a) i, ii and iv
  - (b) ii, iv and v
  - (c) ii, iii and iv
  - (d) i, iv and v