Q- If $\text{adj}(B) = A$, $|P| = |Q| = 1$, then $\text{adj}(Q^{-1}BP^{-1})$ is

A) PQ B) QAP C) PAQ D) $PA^{-1}Q$

Soln- $\text{adj}(Q^{-1}BP^{-1}) = (\text{adj}\,P^{-1})(\text{adj}\,B)(\text{adj}\,Q^{-1})$

{ Property - $\text{adj}(AB) = \text{adj}\,B \cdot \text{adj}\,A$ }

$\text{adj}(Q^{-1}BP^{-1}) = |P^{-1}|(P^{-1})^{-1} \cdot A \cdot |Q^{-1}|(Q^{-1})^{-1}$

{ Using - $\text{adj}(A) = |A| \cdot A^{-1}$ & given that $\text{adj}(B) = A$ }

$\text{adj}(Q^{-1}BP^{-1}) = (P^{-1})^{-1} \cdot A \cdot (Q^{-1})^{-1}$

$\left\{|P^{-1}| = \frac{1}{|P|} = \frac{1}{1} = 1\right\}$

$\boxed{\text{adj}(Q^{-1}BP^{-1}) = PAQ}$ { Using property $(A^{-1})^{-1} = A$ }

~~Optino~~ Option (c) is correct.