

- 37 In four separate reactions, W, X, Y and Z, 1 mol of an organic compound reacts with an excess of a reagent.

	organic compound	reagent
W	$(\text{CH}_2\text{COOH})_2$	Na
X	$\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{COOH}$	Na_2CO_3
Y	$\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{COOH}$	NaOH
Z	$\text{CH}(\text{OH})(\text{COOH})\text{CH}_2\text{COOH}$	Na

The volume of any gas produced is collected and measured. All gas volumes are measured at the same temperature and pressure.

What is the order of the reactions from greatest total volume of gas collected to least total volume of gas collected?

	greatest volume	→			least volume
A	W	Y	Z	X	
B	W	Z	Y	X	
C	Z	W	X	Y	
D	Z	X	W	Y	