$$(X \otimes Y) \otimes Z$$

$$\sigma_{X,Y} \otimes \operatorname{id}_{Z}$$

$$(Y \otimes X) \otimes Z$$

$$\downarrow \sigma_{X,Y \otimes Z}$$

$$(Y \otimes Z) \otimes X$$

$$Y \otimes (X \otimes Z)$$

$$\operatorname{id}_{Y} \otimes \sigma_{X,Z}$$