

$$\begin{array}{ccc}
 X & \xrightarrow{f} & Y \\
 \alpha \downarrow & \circlearrowleft & \downarrow \beta \\
 A & \xrightarrow{g} & B
 \end{array}$$

A commutative diagram with four nodes: X (top-left), Y (top-right), A (bottom-left), and B (bottom-right). The horizontal arrows are $f: X \rightarrow Y$ and $g: A \rightarrow B$. The vertical arrows are $\alpha: X \rightarrow A$ and $\beta: Y \rightarrow B$. A dashed diagonal arrow $s: X \rightarrow B$ points from X to B . A curved arrow \circlearrowleft is located in the center of the diagram, pointing from the top-left towards the bottom-right.

“pure”

$\in \mathbf{mod}_R$