

$$\begin{array}{ccccccc}
 X & \xrightarrow{\begin{pmatrix} 1 \\ 0 \end{pmatrix}} & X \oplus C & \xrightarrow{(0,1)} & C & \xrightarrow{0} & \\
 \parallel & & \downarrow (f,t) & & \downarrow s & & \\
 X & \xrightarrow{f} & Y & \xrightarrow{g} & Z & \xrightarrow{\eta} & \\
 \downarrow u & & \downarrow (f,t) & & & & \\
 X' & & Y & & & &
 \end{array}$$

Commutative diagram illustrating a sequence of maps and transformations between objects X , $X \oplus C$, C , X , Y , Z , X' , and Y .

The top row shows the sequence: $X \xrightarrow{\begin{pmatrix} 1 \\ 0 \end{pmatrix}} X \oplus C \xrightarrow{(0,1)} C \xrightarrow{0} \text{ (terminal object)}$.

The bottom row shows the sequence: $X \xrightarrow{f} Y \xrightarrow{g} Z \xrightarrow{\eta} \text{ (terminal object)}$.

Vertical maps connect the rows: $X \rightarrow X$ (identity), $X \oplus C \rightarrow Y$ (labeled (f,t)), $C \rightarrow Z$ (labeled s), and $X \rightarrow X'$ (labeled u).

A red arrow labeled $(1,0)$ points from $X \oplus C$ back to X .

A red arrow labeled (f,t) points from Y down to Y .

A red dashed arrow labeled α points from Y back to X' .