

$$\begin{array}{ccccc}
 FX & \xrightarrow{Ff} & FE & \xleftarrow{Fg} & FY \\
 \uparrow c & & \uparrow e & & \uparrow d \\
 X & \xrightarrow{f} & E & \xleftarrow{g} & Y
 \end{array}$$

A commutative diagram illustrating a relationship between two categories. The top row consists of objects FX , FE , and FY . The bottom row consists of objects X , E , and Y . The diagram is structured as follows:

- Horizontal arrows: $FX \xrightarrow{Ff} FE \xleftarrow{Fg} FY$ and $X \xrightarrow{f} E \xleftarrow{g} Y$.
- Vertical arrows: $X \xrightarrow{c} FX$, $E \xrightarrow{e} FE$, and $Y \xrightarrow{d} FY$.
- Equality signs: $=$ is placed between c and e , and between d and g .