

$$a \mapsto \phi(a)$$

$$\begin{array}{ccccc}
 R & \xrightarrow{\phi} & K & & \phi(k) \\
 & \searrow \iota & \uparrow \text{\tiny $\exists! \Phi$} & & \uparrow \\
 & & Q(R) & & \frac{a}{1} \\
 a & \searrow & & & \\
 & & \frac{a}{1} & & 
 \end{array}$$