

①

$$\cancel{r}x \frac{1}{\cancel{r}} + k = \cancel{r}x \frac{1}{\cancel{r}} + 1$$

$$\begin{aligned} r+k &= r \\ k &= 0 \end{aligned}$$

$$rx+1 = \frac{rx^r-1}{rx-1}$$

$$rx-1 \rightarrow rx-1 \neq 0$$

$$rx \neq 1$$

$$x \neq \frac{1}{r} = a$$

$$a+k = \frac{1}{r} + 0 = \frac{1}{r}$$

$$ra \times \left(-\frac{r}{r}\right) + r = r \left(-\frac{r}{r}\right) + b$$

$$-ra + r = -r + b$$

$$ra + b = r$$

$$ra + (-b) = r$$

$$a = r$$

$$\frac{rx^r - r}{rx + r} = rx + b$$

$$rx^r - r = (rx + b)(rx + r)$$

$$\rightarrow = -r$$

$$a - b = r - (-r) = a$$

②

$$ra^r + ar = r + r$$

$$ra^r + ra = r$$

$$ra^r + ra - r = 0$$

$$a^r + a - r = 0$$

$$(a+r)(a-1) = 0$$

$$a = -r \quad a = 1$$

③