5. $f(x) = \frac{1}{x}$ ; $x \neq 0$ .

$$f(f(x)) = \frac{1}{f(x)} = \frac{1}{\frac{1}{x}} = x$$

$\therefore$ $\underline{\underline{f(f(x)) = x \quad \text{for} \quad x \neq 0}}$ .

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6. $f(x) = \frac{1}{1-x}$ . $(x \neq 1, x \neq 0)$

$$f(f(x)) = \frac{1}{1-f(x)} = \frac{1}{1-\frac{1}{1-x}}$$

$$= \frac{1}{\frac{1-x-1}{1-x}} = \frac{1}{\frac{-x}{1-x}} = \frac{1-x}{-x} = \frac{x-1}{x}$$

$(x \neq 0)$

$\therefore$

$$f(f(f(x))) = \frac{1}{1-f(f(x))} = \frac{1}{1-\frac{x-1}{x}}$$

$$= \frac{1}{\frac{x-x+1}{x}} = \frac{1}{\frac{1}{x}} = x$$

$\therefore$ $\underline{f(f(f(x))) = x}$ , $x \neq 0, x \neq 1$