(1) We start by calculating the reverse function $y=f(x)=\frac{1}{x-2}\Leftrightarrow x-2=\frac{1}{y}\Leftrightarrow x=\frac{1}{y}+2$ So, $f^{-1}(y)=\frac{1}{y}+2$

(2) Is f (x) defined on domain R (co-domain of f)?

-> No, it is not defined for y=0

=> f: R- 123 -> R is not surjective

(3) However
$$f: \mathbb{R} - \{2\} \to \mathbb{R} - \{0\}, f(x) = \frac{1}{x-2}$$

 $f^{-1}: \mathbb{R} \cdot \{0\} \to \mathbb{R} - \{2\}, f^{-1}(x) = \frac{1}{x} + 2$

are inverse funtions => they are both byective

Checking if functions are the inverse of one another

(1) $f(f^{-1}(y))$, $for y \in \mathbb{R} - \{0\}$

(2)
$$f^{-1}(f(x)), for x \in \mathbb{R} - \{2\}$$

f(x) = x + 2