Let $a$ and $b$ be rational variables. Define procedure $P$ as

$$P = \langle x, y: \text{rat} \rightarrow \text{if } x=0 \text{ then } a := x \text{ else } a := x \times y. \ a := a \times y \text{ fi} \rangle$$

(a) What is the exact precondition for $a' = b'$ to be refined by $P \ a \ (1/b)$?

(b) Discuss the difference between “eager” and “lazy” evaluation of arguments as they affect both the theory of programming and programming language implementation.

§ see “a Theory of Lazy Imperative Timing”