

1. Problem 1

let $x = 5$;;

let $a = x * 4$;;

$\rho_1 = \{x \rightarrow 5, a \rightarrow 20\}$

let $g\ x = x + (3 * a)$;;

$\rho_2 = \{g \rightarrow < \text{fun } x \rightarrow x + (3 * a), \rho_1 >, x \rightarrow 5, a \rightarrow 20\}$

let $a = g\ (g\ 3)$;;

$\rho_3 = \{a \rightarrow 123, g \rightarrow < \text{fun } x \rightarrow x + (3 * a), \rho_1 >, x \rightarrow 5\}$

let $b =$

let $f\ x\ y = g\ x + g\ (y + a)$ in

$\rho_4 = \{f \rightarrow < x \rightarrow \text{fun } y \rightarrow gx + g(y + a), \rho_3 >, a \rightarrow 123, g \rightarrow < \text{fun } x \rightarrow x + (3 * a), \rho_1 >, x \rightarrow 5\}$

$f\ x\ (g\ a)$;;

$\rho_5 = \{b \rightarrow 431, a \rightarrow 123, g \rightarrow < \text{fun } x \rightarrow x + (3 * a), \rho_1 >, x \rightarrow 5\}$