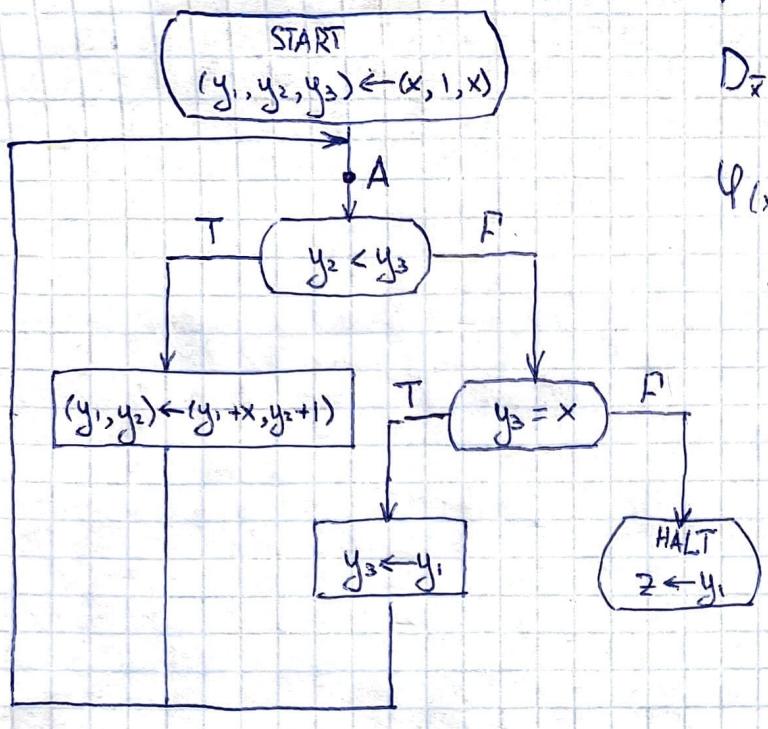
Задание 1.3



$V = \{x, y_1, y_2, y_3, z\}$

$D_{\bar{x}} = D_{\bar{y}} = D_{\bar{z}} = \mathbb{Z}$

$\varphi(x) \equiv x > 1$

$W = \{\mathbb{N} \cup \{0\}, >\}$

S-A: $x > 1 \Rightarrow q(x, x, 1, x)$

A-T-A: $x > 1 \wedge q(x, y_1, y_2, y_3) \Rightarrow U(x, y_1, y_2, y_3) \in W$

A-T-A: $x > 1 \wedge q(x, y_1, y_2, y_3) \wedge y_2 < y_3 \Rightarrow q(x, y_1 + x, y_2 + 1, y_3)$

A-T-A: $x > 1 \wedge q(x, y_1, y_2, y_3) \wedge y_2 < y_3 \Rightarrow U(x, y_1 + x, y_2 + 1, y_3) < U(x, y_1, y_2, y_3)$

A-F-T-A: $x > 1 \wedge q(x, y_1, y_2, y_3) \wedge y_2 \geq y_3 \wedge y_3 = x \Rightarrow q(x, y_1, y_2, y_1)$

A-F-T-A: $x > 1 \wedge q(x, y_1, y_2, y_3) \Rightarrow U(x, y_1, y_2, y_3) \in W$

A-F-T-A: $x > 1 \wedge q(x, y_1, y_2, y_3) \wedge y_2 \geq y_3 \wedge y_3 = x \Rightarrow U(x, y_1, y_2, y_1) < U(x, y_1, y_2, y_3)$

$q(x, y_1, y_2, y_3) \equiv y_1 = y_2 \cdot x \wedge ((y_3 = x \wedge y_2 \leq x) \vee (y_3 = x^2 \wedge y_2 \leq x^2))$

S-A: $x > 1 \Rightarrow x = 1 \cdot x \wedge ((x = x \wedge 1 \leq x) \vee (x = x^2 \wedge 1 \leq x^2))$

A-T-A: $x > 1 \wedge y_1 = y_2 \cdot x \wedge ((y_3 = x \wedge y_2 \leq x) \vee (y_3 = x^2 \wedge y_2 \leq x^2)) \wedge y_2 < y_3 \Rightarrow y_1 + x = (y_2 + 1) \cdot x \wedge$

$\wedge ((y_3 = x \wedge y_2 + 1 \leq x) \vee (y_3 = x^2 \wedge y_2 + 1 \leq x^2)) \wedge y_2 + 1 < y_3$

A-F-T-A: $x > 1 \wedge y_1 = y_2 \cdot x \wedge ((y_3 = x \wedge y_2 \leq x) \vee (y_3 = x^2 \wedge y_2 \leq x^2)) \wedge y_2 \geq y_3 \wedge y_3 = x \Rightarrow y_1 = y_2 x \wedge$

$\wedge ((y_1 = x \wedge y_2 \leq x) \vee (y_1 = x^2 \wedge y_2 \leq x^2))$

$U(x, y_1, y_2, y_3) = x^3 - y_2 - y_3$

A: $x > 1 \wedge q(x, y_1, y_2, y_3) \Rightarrow U(x, y_1, y_2, y_3) \in W$

$x > 1 \wedge y_1 = y_2 \cdot x \wedge ((y_3 = x \wedge y_2 \leq x) \vee (y_3 = x^2 \wedge y_2 \leq x^2)) \Rightarrow x^3 - y_2 - y_3 \geq 0$

$x > 1 \wedge y_1 = y_2 \cdot x \wedge ((y_3 = x \wedge y_2 \leq x) \vee (y_3 = x^2 \wedge y_2 \leq x^2)) \Rightarrow x^3 \geq y_2 + y_3$