

* $f[0..100)$ of CHAR

— ARE 1ST 10 ELEMENTS SAME AS LAST 10 ?

$$\langle \forall j : 0 \leq j < i : f.j = f.(j+90) \rangle \wedge$$

$$((f.i \neq f.(i+90) \wedge \text{"No"})$$

$$\vee$$

$$(i=99 \wedge f.i = f.(i+90) \wedge \text{"yes"}))$$

— DOES THE WORD "AT" APPEAR IN f ?

$$\langle \forall j : 0 \leq j < i : f.j \neq \text{"A"} \vee f.(j+1) \neq \text{"T"} \rangle \wedge$$

$$((f.i = \text{"A"} \wedge f.(i+1) = \text{"T"} \wedge \text{"yes"})$$

$$\vee$$

$$(i=98 \wedge (f.i \neq \text{"A"} \vee f.(i+1) \neq \text{"T"}) \wedge \text{"No"}))$$

* $f[0..1000)$ of INT, $g[0..20)$ of INT

— DOES g MATCH MIDDLE 20 ELEMENTS OF f ?

$$\langle \forall j : 0 \leq j < i : g.j = f.(j+490) \rangle \wedge$$

$$((g.i \neq f.(i+490) \wedge \text{"No"})$$

$$\vee$$

$$(i=19 \wedge g.i = f.(i+490) \wedge \text{"yes"}))$$

— IS g THE REVERSE OF THE LAST 20 ELEMENTS IN f ?

$$\langle \forall j : 0 \leq j < i : g.j = f.(999-j) \rangle \wedge \\ ((g.i \neq f.(999-i) \wedge \text{"No"}) \vee \\ (i=19 \wedge g.i = f.(999-i) \wedge \text{"Yes"}))$$

— DOES f CONTAIN ANY NEGATIVE VALUES?

$$\langle \forall j : 0 \leq j < i : 0 \leq f.j \rangle \wedge \\ ((f.i < 0 \wedge \text{"Yes"}) \vee \\ (i=999 \wedge 0 \leq f.i \wedge \text{"No"}))$$

— ARE ALL THE VALUES IN g EVEN?

$$\langle \forall j : 0 \leq j < i : \text{even.}(f.j) \rangle \wedge \\ ((\neg \text{even.}(f.i) \wedge \text{"No"}) \vee \\ (i=999 \wedge \text{even.}(f.i) \wedge \text{"Yes"}))$$

NOTE YOU CAN ALSO USE

$$f.i \bmod 2 = 0 \quad \text{for } \text{even.}(f.i)$$

— IS f ASCENDING ?

$$\langle \forall j : 0 \leq j < i : f.j \leq f.(j+1) \rangle \wedge$$

$$((f.i > f.(i+1) \wedge \text{"No"})$$

$$\vee (i=998 \wedge f.i \leq f.(i+1) \wedge \text{"Yes"}))$$

— ARE ALL THE ELEMENTS IN f SMALLER
THAN THE ELEMENTS IN g ?

$$S = \langle \downarrow j : 0 \leq j < 20 : g.j \rangle$$

\wedge

$$\langle \forall j : 0 \leq j < i : f.j \leq S \rangle \wedge$$

$$((f.i > S \wedge \text{"No"})$$

$$\vee (i=999 \wedge f.i \leq S \wedge \text{"Yes"}))$$