

Inspi and Totalturn

by Doug Moore

The article on INSPI by Bill Craig on Page 16 of the April, 1989 issue of CLIME News prompted me to play with INSPI again. I used the following procedure:

```
TO INSPI :SIDE :ANGLE :INC
  FD :SIDE RT :ANGLE
  INSPI :SIDE REMAINDER :ANGLE + :INC 360 :INC
END
```

I used "REMAINDER :ANGLE + :INC 360" instead of ":ANGLE + :INC" in order to discard multiples of 360, because the LogoWriter program I am using "doesn't like" to use numbers that get too big (for example, try INSPI 10 120 120 with and without remainder).

I took a notion to investigate the case in which I choose INC equal to ANGLE. After several

trials, I noticed two patterns occurring, as illustrated in figures 1 and 2. This article will describe and analyze these patterns — partly.

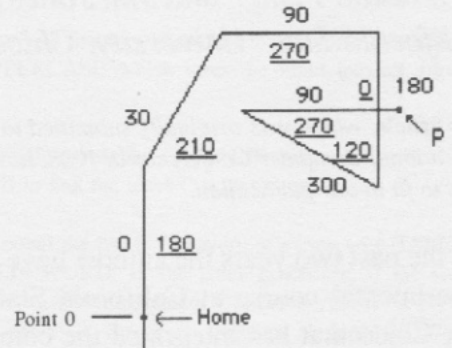


Figure 1

In figure 1, the turtle starts at the center (home) winds around, and finally comes to a point, P, where it turns 180 degrees (or an odd multiple of 180), and then retraces its path **exactly**, returning to the center. It then continues and completes the

See Inspi...p. 11

Problem of the Month

In CLIME News V. 2 No. 1, I posed the following problem: write a Logo script that counts the frequency of occurrences of letters in an input string.

Here is a solution offered by George Cathcart written in **Logo Plus**.

```
TO COUNT.LETTERS :ALIST
  MAKE "ALIST UPPERCASE :ALIST
  INITIALIZE 65
  TALLY :ALIST
  DISPLAY.RESULTS
END
```

```
TO INITIALIZE :COUNTER.LET
  IF :COUNTER.LET > 90 STOP
  MAKE WORD "C :COUNTER.LET 0
  INITIALIZE :COUNTER.LET + 1
END
```

```
TO TALLY :ALIST
  IF EMPTY? :ALIST STOP
  COUNT.LET.IN.WORD FIRST :ALIST
  TALLY BF :ALIST
END
```

```
TO TAB :N
  REPEAT :N [PRINT1 CHAR 32]
END
```

```
TO PR.TALLY :LETTER
  IF :LETTER > 77 STOP
  TAB 2 PRINT1 CHAR :LETTER
  TAB 7 PRINT1 THING WORD "C :LETTER
  TAB 12 PRINT1 CHAR (:LETTER + 13)
  TAB 7 PRINT1 THING WORD "C (:LETTER + 13)
  PR []
  PR.TALLY :LETTER + 1
END
```

```
TO DISPLAY.RESULTS
  TEXTSCREEN CLEARTEXT
  PR []
  PRINT1 "LETTER
```