

Midterm
12 February, 1992

This is an open book exam. You are to turn in this exam at 8:30 PM.

Name: _____

Problem 1: 2 points.

List 4 reserved words in Turbo Pascal.

Problem 2: 4 points.

Which of the following are valid integers in Pascal? Circle your choices.

007 7.0 0x1d '5'

Problem 3: 4 points.

Which of the following are valid reals in Pascal? Circle your choices.

PI 0.314E2 17000 5,000.0

Problem 4: 2 points.

What two letters name the two floppy disk drives under MS/DOS?
(This is where you store you files, *e.g.*, Z:phone.pas.)

Problem 5: 36 points.

For each of the following twelve expressions, state whether the expression is valid or invalid and, if valid, state the type *and* value of the expression.

33 MOD 5

10 / 3 MOD 1

9 DIV 10

(8 < 9) = (8 < 10)

'1' + '2'

1 MOD 20

28 / 2 * 7

8 < 9 < 10

7 * (5+3.0)

FALSE AND TRUE OR TRUE

2000 < 2001 AND 7 < 3

'A' < 'B'

Problem 6: 10 points.

Assume that I, J, and K have been declared as integer variables and C has been declared as a character variable. What are the values of these four variables after the following READ and READLN statements:

```
READLN(INPUT, I, J);
READ(INPUT, C, K);
```

have been used to read the following input characters:

```
30
31 32
3 15 40
```

(Assume the character '3' is the first character in each line.)

I = J = K = C =

*Write your solutions to the next three problems on your own paper.
Be sure to write your name on your solutions!*

Problem 7: 10 points.

Suppose the REAL variable BALANCE contains your bank balance. Write a few Pascal statements that will print the line:

I am broke.

if BALANCE is less than 0 and will print a line similar to:

I have \$1.17.

if BALANCE is greater than 0. Be sure to print exactly two digits after the decimal place.

Problem 8: 15 points.

Write a WHILE loop that reads all the characters of a file and counts, and then prints, the number of times the character 'X' occurred in the file.

Problem 9: 15 points.

What does the following loop print:

```
N := 3 ;
WHILE N <> 0 DO
  BEGIN
    WRITELN(OUTPUT, N:5) ;
    IF N MOD 2 = 0 THEN {N is even}
      N := N DIV 2
    ELSE
      N := 3*N + 1
  END ;
```