

## FLORIDA HIGH SCHOOLS COMPUTING COMPETITION '80

1.1 Write A Program (W.A.P.) to print on the screen the terms of the Fibonacci sequence. (1,1,2,3,5,8,...). (The user will ask for the number of terms.) The sequence has the property that each number (beyond the first two) is the sum of the two previous numbers.

1.2 W.A.P. that will flash a symbol on and off approximately every 10 seconds.

1.3 W.A.P. that when given the length and width of a rectangle, determines the perimeter.

1.4 W.A.P. to convert Celsius to Fahrenheit.  $C = 5/9 * (F-32)$

1.5 W.A.P. to test the input to see if it is a numeral or a non-numeral.

1.6 W.A.P. to determine the gas mileage of a car given the distance traveled and the number of gallons used.

1.7 W.A.P. to test if a number is divisible by five.

1.8 W.A.P. to determine one leg of a right triangle, given the other leg and the hypotenuse.

1.9 W.A.P. that will move a dot or blob across the screen.

## 2 FLORIDA HIGH SCHOOLS COMPUTING COMPETITION 1980 - 1984

2.1 Write A Program (W.A.P.) that will read a sequence of numbers that the operator inputs and prints the largest number in the sequence.

2.2 W.A.P. to tell whether the numbers input are the sides of a triangle, square, or rectangle.

2.3 W.A.P. that will determine the sum of the integers from 1,000 to 2,000 inclusive (i.e.  $1,000 + 1,001 + \dots + 2,000$ ).

2.4 W.A.P. that will reverse a 3 digit number that is given to the computer (i.e. 324 becomes 423)

2.5 W.A.P. that will draw a rectangle somewhere on the screen.

2.6 W.A.P that when given 3 numbers, will print them in increasing order.

2.7 W.A.P. to determine the mean (average) of a set of numerals.

2.8 W.A.P. to determine if a number is even or odd.

2.9 W.A.P. to determine if a number less than 200 is prime.

2.10 W.A.P. to determine the value of the change in the users's pocket. Have the computer ask for the number of each type of coin and then calculate the value.

2.11 W.A.P. that will determine the number of times the letter "e" appears in a sentence that is given to the computer.

- 3.1 W.A.P. to randomly generate basic multiplication facts and tell whether the operator is right or wrong.
- 3.2 W.A.P. to generate the digits 0-9 in random order without repetition (i.e. 1,2,0,7,4,3,6,5,9,8).
- 3.3 W.A.P. that will round a number to the nearest ten (i.e. 12 becomes 10; 1065 becomes 1070).
- 3.4 W.A.P. to change a number from base ten to base four.
- 3.5 W.A.P. to change a base three number to base ten.
- 3.6 W.A.P. to change a repeating or terminating decimal to a fraction in simplified form (i.e.  $.25 = 1/4$ ).
- 3.7 W.A.P. that will show how to represent an amount of money less than a dollar using a minimum number of coins (i.e.  $\$.78 = 1 \$.50$  piece, 1 quarter, 3 pennies).
- 3.8 W.A.P. where the computer selects a number from 1 to 10 and the operator attempts to guess the number. The operator is informed as to whether the guess is too low, too high, or right on.
- 3.9 W.A.P. that will find the values of a,b,c and d so that  $a^b \times c^d = abcd$  where abcd is a four digit number.
- 3.10 W.A.P. that will tell what day of the week a given date falls on in 1980. (Hint- Jan. 1 is a Tuesday).
- 3.11 W.A.P. that will simulate an "etch-a-sketch" (i.e. when appropriate keys are pressed, the dot traces a line segment in the appropriate direction).
- 3.12 W.A.P. that will determine if a word is a palindrome (i.e. ANNA is spelled the same forward and backwards).