

## **14. Arithmetic using ADD, SUBTRACT, MULTIPLY and DIVIDE**

Another method of doing arithmetic in COBOL is to use the commands: ADD, SUBTRACT, DIVIDE and MULTIPLY.

### **1. ADD**

e.g. (1) ADD OVERTIME-PAY TO TOTAL-PAY.

OVERTIME-PAY is added to whatever number is already in TOTAL-PAY.

e.g. (2) ADD OVERTIME-PAY BASIC-PAY GIVING TOTAL-PAY.

*(May also be written as*

*ADD OVERTIME-PAY TO BASIC PAY GIVING TOTAL-PAY).*

The values of OVERTIME-PAY and BASIC-PAY are added and the result is stored in TOTAL-PAY without changing other items.

### **2. SUBTRACT**

e.g. (1) SUBTRACT TAX FROM TOTAL-PAY.

TAX is deducted from whatever value is stored in TOTAL-PAY.

e.g. (2) SUBTRACT TAX FROM GROSS-PAY GIVING NET-PAY.

TAX is taken from GROSS-PAY and the answer stored in NET-PAY. (Note - the value of GROSS-PAY is not altered).

### **3. MULTIPLY**

e.g. (1) MULTIPLY NUMBER1 BY NUMBER2.

The result will overwrite the contents of NUMBER2.

e.g. (2) MULTIPLY HOURLY-RATE BY 2 GIVING OVERTIME-RATE.

The result is stored in OVERTIME-RATE without changing other items.

### **4. DIVIDE**

e.g. (1) DIVIDE NUMBER1 INTO NUMBER2.

The result overwrites NUMBER2.

e.g. (2) DIVIDE NUMBER-OF-STAFF INTO TOTAL-BONUS  
GIVING STAFF-BONUS

e.g. (3) DIVIDE TOTAL-BONUS BY NUMBER-OF-STAFF  
GIVING STAFF-BONUS

The result is placed in STAFF-BONUS without change to the other data items.

### **DIVIDE ... REMAINDER**

The computer can also be asked to give a whole number and a remainder as the answer to a division if appropriate.

e.g. (1) DIVIDE NO-OF-CHILDREN INTO NO-OF-SWEETS  
GIVING NO-OF-SWEETS-PER-CHILD  
REMAINDER SWEETS-LEFT-OVER.

e.g. (2) DIVIDE NO-OF-SWEETS BY NO-OF-CHILDREN  
GIVING NO-OF-SWEETS-PER-CHILD  
REMAINDER SWEETS LEFT-OVER.

### **Exercise**

Repeat the questions in Lesson 13 using the commands ADD, SUBTRACT, MULTIPLY and DIVIDE instead of COMPUTE.