

**Problem 2.1**

**EASY**

**General Statement:** Write a program to print `EASY` on the screen `x` number of times.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain one number that represents the number of times to print `EASY`.

**Name of Data File :** `pr21.dat`

**Output:** Print out `EASY` `x` number of times. Each `EASY` should be on a separate line.

**Sample Input :**

```
3
3
2
1
```

**Sample Output:**

```
EASY
EASY
EASY
```

```
EASY
EASY
```

```
EASY
```

**Problem 2.2**

**OUNCES TO MILLILITERS**

**General Statement:** Take a value in ounces and convert that value to milliliters. 1 fluid ounce is equal to 29.573529 milliliters.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain the number of ounces to convert rounded to the nearest integer.

**Name of Data File :** pr22.dat

**Output:** Print out the number of ounces converted to the number of milliliters as an integer.

**Assumptions:** Round to the nearest whole number.

**Sample Input :**

2  
6  
12

**Sample Output:**

177  
355

**Problem 2.3**

**FAT FOOD**

**General Statement:** Read in a list of food items and calculate how many fat grams are in the list. A Burger King whopper contains 64g of fat and a Chick-fil-a chicken sandwich contains 13g of fat.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain a number indicating the number of food items followed by the food items. The only food item values are WHOPPER and CHICKEN SANDWICH.

**Name of Data File :** pr23.dat

**Output:** Print out the number of grams of fat for each data set.

**Sample Input :**

```
3
2
WHOPPER
CHICKEN SANDWICH
3
WHOPPER
WHOPPER
WHOPPER
3
CHICKEN SANDWICH
CHICKEN SANDWICH
CHICKEN SANDWICH
```

**Sample Output:**

```
77g
192g
39g
```

**Problem 2.4**

**DIGITAL PICS**

**General Statement:** Read in a group of picture sizes and the number of each size ordered. Calculate the total cost for each order. 8X10 photos cost 75 cents and 3X5 photos cost 42 cents each.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain the number of 8X10 photos and the number of 3X5 photos.

**Name of Data File :** pr24.dat

**Output:** Print out the cost of each set of pictures in dollars. All output should have 1 decimal place.

**Sample Input :**

```
2
8X10 3
3X5 10
8X10 10
3X5 2
```

**Sample Output:**

```
$6.5
$8.3
```

## Problem 2.5

## SCORING UIL WRITTEN TESTS

**General Statement:** Write a program to calculate a UIL written score. Read in the number correct and number skipped and output the score. Each problem answered correctly is worth 6 points and each problem answered incorrectly results in the loss of 2 points. Each UIL test contains 40 questions.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain the number of questions correct and the number of questions skipped.

**Name of Data File :** pr25.dat

**Output:** Print out the UIL score for each data set.

### Sample Input :

```
4
CORRECT
20
SKIPS
10
CORRECT
38
SKIPS
0
CORRECT
40
SKIPS
0
CORRECT
36
SKIPS
0
```

### Sample Output:

```
100
224
240
208
```

**Problem 2.6**

**BUST A MOVE DUDE**

**General Statement:** Read in a word and output that word followed by BUST A MOVE.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain one word.

**Name of Data File :** pr26.dat

**Output:** Print out each word followed by BUST A MOVE.

**Sample Input :**

```
4
BUNNY
CAT
DOG
MAMA
```

**Sample Output:**

```
BUNNY BUST A MOVE
CAT BUST A MOVE
DOG BUST A MOVE
MAMA BUST A MOVE
```

**Problem 5.1**

**DOUBLE COUNTER**

**General Statement:** Read in a list of data values and count up the number of doubles present in the list. Data values could be ints, doubles, or single letter characters like a, b, c, d, etc.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain a list of 6 data values.

**Name of Data File :** pr51.dat

**Output:** Print out the number of doubles present on each line.

**Sample Input :**

```
3
5 7.3 9.1 2.3 6 5
A b 2.1 3 4 3
9.0 5.2 9.8 a b 8
```

**Sample Output:**

```
DOUBLE COUNT = 3
DOUBLE COUNT = 1
DOUBLE COUNT = 3
```

**Problem 5.2**

**DISTANCE**

**General Statement:** Read in a value in kilometers and value in miles and determine which value is biggest. 5 kilometers is equal to 3.1 miles.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain one value in kilometers and one value in miles. Values may be integer or double.

**Name of Data File :** pr52.dat

**Output:** Print out which of the two values is the largest. All output should be set to one decimal place.

**Sample Input :**

```
3
27 km 19.0 miles
40 km 22.0 miles
1 km 3.4 miles
```

**Sample Output:**

```
19.0 miles
40.0 km
3.4 miles
```



**Problem 5.3**

**TRIANGLE WORDS**

**General Statement:** Read in a word and output that word in the shape of a triangle.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain one word.

**Name of Data File :** pr53.dat

**Output:** Print out each word in the shape of a triangle as shown below.

**Sample Input :**

```
4
UP
CAT
FROGGY
WILDCAT
```

**Sample Output:**

```
U
P

C
AT
T

F
RO
OGG
GGY
GY
Y

W
IL
LDC
DCAT
CAT
AT
T
```

**Problem 5.4 GO AWAY BAD LETTERS**

**General Statement:** Read in a string and remove all occurrences of the stated substring. Each time you remove an occurrence of the substring a new occurrence could be created.

**Input:** The first number in the input is the number of data sets to follow. In each data set, there will be a word and a substring to remove. You must remove all occurrences of the substring.

**Name of Data File :** pr54.dat

**Output:** Print out the word with all occurrences of the substring removed.

**Helpful Hints / Assumptions:** Nonee

**Sample Input :**

```
3
howdybobhowdy bob
bigbbobobcb bob
atatatatfunaaattt at
```

**Sample Output:**

```
howdyhowdy
bigcb
fun
```

**Problem 5.5**

**SORRY**

**General Statement:** Read in a set of starting positions for pieces in the game Sorry. Then, read in a set of moves and determine if anyone was Sorried. The moves start with the first piece in the list and then move on to the 2<sup>nd</sup>, 3<sup>rd</sup>, and fourth pieces. A piece gets sorried if another piece lands on it.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain one line with a set of pieces and their starting locations and another line with a set of moves. Moves will occur in left to right in the order listed on the line.

**Name of Data File :** pr55.dat

**Output:** Print out Sorry! or No Sorry!.

**Sample Input :**

```
2
B 5 G 2 R 9 Y 3
B 3 G 7 R 1 Y 8
B 11 G 8 R 9 Y 7
B 3 G 8 R 3 Y 2
```

**Sample Output:**

```
Sorry!
No Sorry!
```

**Problem 5.6                    ASCII AVERAGE**

**General Statement:** Take in a word and sum up the ASCII value of each letter and generate the average ASCII value for the entire word.

**Input:** The first line in the input will consist of a number that indicates the number of data sets to follow. Each data set will contain one word.

**Name of Data File :** pr56.dat

**Output:** Print out the average ASCII value for each word.

**Helpful Hints / Assumptions:** None

**Sample Input :**

```
3
CAT
DOG
IT
```

**Sample Output:**

```
72.00
72.67
78.50
```

**Problem 9.1**

**MAKE AN LLLLL**

**General Statement:** Read in the size of an L and a letter to use to make the L. Make an L shaped pattern. The top of the ELL is created using the values of the rows and columns. The bottom of the ELL is created by using the sum of the values.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain a letter, the number of rows, and the number of columns.

**Name of Data File :** pr91.dat

**Output:** Print out an L for each data set.

**Sample Input :**

```
3
X 3 5
B 2 3
Z 1 4
```

**Sample Output:**

```
XXXXX
XXXXX
XXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
XXXXXXXXX
```

```
BBB
BBB
BBBBB
BBBBB
BBBBB
BBBBB
BBBBB
```

```
ZZZZ
ZZZZZ
ZZZZZ
ZZZZZ
ZZZZZ
ZZZZZ
```

**Problem 9.2**

**CAN WE GET THERE?**

**General Statement:** Read in pairs of planets and the distance between them. Each pair of planets is connected in both directions. Planet A is connected to planet B and planet B is connected to planet A. Read in a pair and a distance and determine if you can get from one planet to the other in the distance specified.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain pairs of planets, the distance between each pair, a planet pair to test, and the maximum distance you have to travel.

**Name of Data File :** pr92.dat

**Output:** Print out POSSIBLE or NOT POSSIBLE.

**Helpful Hints / Assumptions:** You can do it.

**Sample Input :**

```
3
PLUTO MARS 900 MARS SATURN 600 EARTH MARS 100
EARTH PLUTO 1100
A B 50 B C 75 C D 100 G J 10 F G 55 C F 20
A F 140
A B 50 B C 65 C D 100 G J 10 F G 55 C F 20
A F 140
```

**Sample Output:**

```
POSSIBLE
NOT POSSIBLE
POSSIBLE
```

**Problem 9.3                      SORTING SENTENCES**

**General Statement:** Write a program to sort a sentence. The program will first remove all duplicate letters from the words. The program will then sort the letters in each word and then finally sort the words within the sentence.

**Input:** The first number in the input is the number of data sets to follow. Each data set will consist of a sentence of words.

**Name of Data File :** pr93.dat

**Output:** Print out the sorted sentence.

**Sample Input :**

```
4
PETER PIPER PICKED A PECK OF PICKLED PEPPERS
AUSTIN IS AWESOME IN MAY
TEXAS UIL
JAVA IS MY FAVORITE LANGUAGE
```

**Sample Output:**

```
A CDEIKLP CDEIKP CEKP EIPR EPRS EPRT FO
AEMOSW AINSTU AMY IN IS
AESTX ILU
AEFIORTV AEGLNU AJV IS MY
```

**Problem 9.4**

**YAHTZEE**

**General Statement:** Read in 5 dice values and determine which of the following would be the best way to score the 5 dice result.

3 of a kind – 3 dice values are the same – the score is the sum of all 5 dice

4 of a kind – 4 dice values are the same – the score is the sum of all 5 dice

Full House – 3 of the same value and 2 of the same value – 25 points

Small Straight – 4 dice values in order(2,3,4,5) – 30 points

Large Straight – all 5 dice values are in order(1,2,3,4,5 or 2,3,4,5,6) – 40 points

Yahtzee – all 5 dice values are the same – 50 points

Chance – if the dice did not match of the options above – total all 5 dice

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain 5 dice values.

**Name of Data File :** pr94.dat

**Output:** Print out the best way to use the 5 dice values and the score.

**Sample Input :**

```
3
2 2 2 1 1
6 6 6 2 3
1 2 3 5 6
```

**Sample Output:**

```
FULL HOUSE - 25 POINTS
3 OF A KIND - 23 POINTS
CHANCE - 17 POINTS
```



**Problem 9.5**                      **HOLY MAZES BATMAN!**

**General Statement:** You are trapped in a maze and there are holes everywhere. You must determine if you can exit the maze without falling into one of the holes. # are walls, H are holes, . are paths, S is the start, and E is the exit.

**Input:** There are an unknown number of data sets in the file. Each data will contain 2 numbers representing the row and column size of the maze, followed by the actual maze.

**Name of Data File :** pr95.dat

**Output:** Print out MADE IT if you are able to exit the maze or FELL IN A HOLE if you could not make it out of the maze.

**Helpful Hints / Assumptions:** Some of the mazes will be small and some will be very big.

**Sample Input :**

```
7 8
#####
#H.#.E#
#...H.#
##.HHH.#
#...H.#
#H.#..S#
#####
7 8
#####
#E.....#
#.....##
#...H##
#.HHH..#
#HH...S#
#####
```

**Sample Output :**

```
MADE IT
FELL IN A HOLE
```

**Problem 9.6**

**TREE FUN**

**General Statement:** Write a program to print the tree shown below.

**Input:** The first line in the data file is an integer that represents the number of data sets to follow. Each data set will contain one number that indicates the size of the tree.

**Name of Data File :** pr96.dat

**Helpful Hints / Assumptions:** Should be something here.

**Output:** Print out the tree shown below.

**Helpful Hints / Assumptions:** It is not as bad as it looks.

**Sample Input :**

```
4
1
2
3
4
```

**Sample Output:**

```
*

*
***
*

*
***
*****
*

*
***
*****
*****
*
```