Ⓦ 5.   In the SCRABBLE Crossword Game, players form words using small tiles, each containing a letter and a face value. The face value varies from one letter to another, based on the letter's rarity. (Here are the face values: 1: AEILNORSTU, 2: DG, 3: BCMP, 4: FHVWY, 5: K, 8: JX, 10: QZ.) Write a program that computes the value of a word by summing the values of its letters:

```
Enter a word: pitfall
Scrabble value: 12
```

Your program should allow any mixture of lower-case and upper-case letters in the word. *Hint:* Use the toupper library function.

Ⓦ 6.   Write a program that prints the values of sizeof(int), sizeof(short), sizeof(long), sizeof(float), sizeof(double) and sizeof(long double).

7.   Modify Programming Project 6 from Chapter 3 so that the user may add, subtract, multiply, or divide two fractions (by entering either +, -, *, or / between the fractions).

8.   Modify Programming Project 8 from Chapter 5 so that the user enters a time using the 12-hour clock. The input will have the form *hours*:*minutes* followed by either A, P, AM, or PM (either lower-case or upper-case). White space is allowed (but not required) between the numerical time and the AM/PM indicator. Examples of valid input:

```
1:15P
1:15PM
1:15p
1:15pm
1:15 P
1:15 PM
1:15 p
1:15 pm
```

You may assume that the input has one of these forms; there is no need to test for errors.

9.   Write a program that asks the user for a 12-hour time, then displays the time in 24-hour form:

```
Enter a 12-hour time: 9:11 PM
Equivalent 24-hour time: 21:11
```

See Programming Project 8 for a description of the input format.

10.   Write a program that counts the number of vowels (a, e, i, o, and u) in a sentence:

```
Enter a sentence: And that's the way it is.
Your sentence contains 6 vowels.
```

11.   Write a program that takes a first name and last name entered by the user and displays the last name, a comma, and the first initial, followed by a period:

```
Enter a first and last name: Lloyd Fosdick
Fosdick, L.
```

The user's input may contain extra spaces before the first name, between the first and last names, and after the last name.

12.   Write a program that evaluates an expression:

```
Enter an expression: 1+2.5*3
Value of expression: 10.5
```