

## Expressions and Operators

1. What operators have we encountered so far? (eg + - etc)  
In a complex expression, how do you know which operation comes first?  
How can you over-ride the natural order of precedence in C?
2. Write a program that prompts the user to enter a double value called `user_val` (use `"%lf"` in `scanf`). Print the square of `user_val` as follows:

```
double  user_val, sqr_val;
...
sqr_val = user_val * user_val;
```

Your program should then print the following information:

```
user_val,      to 2 d.p.  ("%f" in printf)
sqr_val,       to 17 d.p. ("%17f" in printf)
```

3. Write a program that prompts the user for 2 doubles, `f1` and `f2`, and outputs the following results:  
the difference      `f1 - f2`  
the sum            `f1 + f2`  
the product        `f1 * f2`  
the quotient       `f1 / f2`  
the sum of squares `(f1 * f1) + (f2 * f2)`  
the value `f1 + f2` squared

(Note that the modulus `f1 % f2` cannot be used with doubles)

Test your program with the following test data:

```
10.01  5
25e02   50.0001
0       1001
46e-37  46e-37
```

What are the problems with floating point arithmetic?