3.10 Exercises on Chapter 3

3.10.1 Pence to Dollars

Look up, on the internet or elsewhere, the exchange rate between UK Sterling and US Dollars. Write a program that works out how many pence in 250 dollars. (See page 166 Number 7 for the answer.)

3.10.2 Ten Times Table

Write a program that prints out the 10 times table. (See page 166 Number 8 for the answer.)

3.10.3 One Hundred and Thirty Seven Times Table

Write a program that prints out the 137 times table. (See page 166 Number 9 for the answer.)

3.10.4 Operator Precedence

Write some programs to test the order in which expressions are evaluated in Java.

Note

To make the following programs work, you have to write the numbers as real numbers with a decimal point. That is for two, write 2.0. For one million write 1000000.0 and so on. This will be explained in Volume 2.

3.10.5 Seconds in a Year

Write a program to work out the number of seconds in 365 days.

3.10.6 Months in a Millennium

Write a program to work out the number of months in a millennium (1000.0 years).

3.10.7 Bits in a Megabyte

Write a program to work out the number of bits in a megabyte. (A byte is 8 bits and a megabyte is 2.0^{20} bytes) To work out 2.0^{10} for now simply write

$$2.0 * 2.0 * 2.0 * 2.0 * 2.0 * 2.0 * 2.0 * 2.0 * 2.0 * 2.0$$

Eventually you will learn a better way of achieving this!

3.10.8 Bits in a Gigabyte

Write a program to work out the number of bits in a gigabyte. (A gigabyte is 2.0^{10} megabytes.)

3.10.9 My Snail

Assume light travels at 299,792,458 metres per second, and the star Proxima Centauri is 4.2 light years away. My snail travels at 48 centimetres an hour. How many years will it take my snail to get to Proxima Centauri and back? Write a Java program to work it out.

3.10.10 Feeding my Snail

My snail eats two grams of lettuce a day. Write a program that works out how many metric tons of lettuce it will have to take with it to Proxima Centauri. There are a million grams in a metric ton.