1.1 (*Display three messages*) Write a program that displays `Welcome to Java`, `Welcome to Computer Science`, and `Programming is fun`.

1.2 (*Display five messages*) Write a program that displays `Welcome to Java` five times.

***1.3** (*Display a pattern*) Write a program that displays the following pattern:

```
    J      A      V      V     A
    J     A A      V    V     A A
J   J    AAAAA      V V     AAAAA
 J J    A     A      V     A     A
```

1.4 (*Print a table*) Write a program that displays the following table:

```
a       a^2     a^3
1       1       1
2       4       8
3       9       27
4       16      64
```

1.5 (*Compute expressions*) Write a program that displays the result of

$$\frac{9.5 \times 4.5 - 2.5 \times 3}{45.5 - 3.5}.$$

1.6 (*Summation of a series*) Write a program that displays the result of

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9.$$

1.7 (*Approximate π*) π can be computed using the following formula:

$$\pi = 4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \ \ldots\ \right)$$

Write a program that displays the result of $4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11}\right)$ and $4 \times \left(1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11} + \frac{1}{13}\right)$. Use `1.0` instead of `1` in your program.

1.8 (*Area and perimeter of a circle*) Write a program that displays the area and perimeter of a circle that has a radius of `5.5` using the following formula:

$$perimeter = 2 \times radius \times \pi$$
$$area = radius \times radius \times \pi$$

1.9 (*Area and perimeter of a rectangle*) Write a program that displays the area and perimeter of a rectangle with the width of `4.5` and height of `7.9` using the following formula:

$$area = width \times height$$

1.10 (*Average speed in miles*) Assume a runner runs `14` kilometers in `45` minutes and `30` seconds. Write a program that displays the average speed in miles per hour. (Note that `1` mile is `1.6` kilometers.)

***1.11** (*Population projection*) The U.S. Census Bureau projects population based on the following assumptions:

- One birth every 7 seconds
- One death every 13 seconds
- One new immigrant every 45 seconds

Write a program to display the population for each of the next five years. Assume the current population is 312,032,486 and one year has 365 days. *Hint*: In Java, if two integers perform division, the result is an integer. The fraction part is truncated. For example, `5 / 4` is `1` (not `1.25`) and `10 / 4` is `2` (not `2.5`).

1.12 (*Average speed in kilometers*) Assume a runner runs `24` miles in `1` hour, `40` minutes, and `35` seconds. Write a program that displays the average speed in kilometers per hour. (Note that `1` mile is `1.6` kilometers.)