

1. The following are shortcuts in Java. What is the full version of these expressions:
 - a. `k += 5;`
 - b. `seconds ++;`
 - c. `num *= 3;`
2. What is `%` ? eg. `x = 8%3;`
3. Variable types: string, integer, long, char, double, boolean. What the differences are between them and when do you use them.
4. Scanner:
given the syntax of scanner, do something if someone enters a number between 5 and 14;
5. Write a program that asks for a person's name and favourite colour. If the colour is red, say "Hey Fred, that's my favourite colour too". Use the person's name instead of "Fred".
Hint: use `.equals()` to see if two strings are the same.
6. Write a for loop to print out numbers
 - a) from 1 to 100
 - b) from 40 to 20
 - c) even numbers from 1 to 100
7. Print out 20 random numbers. Each number should be between 80 and 100 (inclusive)
8. Your program has 3 marks (we'll add them into the program rather than asking the user, but they can be changed).
`m1 = 55; m2 = 81; m3 = 90;`

Write a program to calculate (and print) the average mark.

If the average is over 80 print "well done"

If the average is < 50 print "You failed"

Otherwise print "cool".

If all marks are over 75 and the average is over 80, print "awesome"!

9. Review things like how to find the smallest of 3 numbers
10. Arrays:
 - a. finding the largest number
 - b. Is any number in the array negative?
 - c. Are all of the numbers in the array negative?
11. Using modulus to prevent a number from getting too big (e.g. not more than 255).

12. What is the output of this program:

```
void abc()
    int i;
    int[] stuff = new int[5];
    for (i=0; i<5; i++) {
        stuff[i] = 10 - i;
    }
    for (int j=0; j<5; j++) {
        stuff[j] *= stuff[j%3];
        System.out.println(stuff[j]);
    }
}
```

13. Tracing contents of variables (math operations)

```
b = 5
c = -2
c = b + c
if c > b or b > 4 then
    c = c - 1
else
    b = b - 1
end if
```

14. logic questions similar to Codingbat.com

15. Strings:

- a. the difference between characters and strings
- b. escape characters (new line, tab, "))
- c. adding strings together
- d. how to use the Scanner class to read in words, integers and lines
- e. ~~charAt, substr~~

16. writing a program in java similar to the ones like _____. Scanner, get numeric input, check if it is o.k. or not, loop more. Do calculations. Print output.

17. Graphics: loop through an array of balls or aliens and move each one 5 pixels right and 10 pixels down.

18. If two objects intersect, then ...

subtract 10 from health. Add a line of code to make sure that health never goes negative.