23. Tax in Ruritania.

filename: ruritania.js

In the fictional country of Ruritania, the tax rules are such that if a person has an income <1000, then you pay 10% tax on the entire income, and if the income> = 1000, then you pay 10% tax on the first 1000 Euros and 30% tax on the rest of the income.

Create a script that calculates and prints how many euros to pay in taxes. The script should read the income (which is assumed to be a decimal number) from user input.

Solution:

```javascript
var input = prompt("What is your income?");
var income = parseFloat(input);
console.log(income);

if (income < 1000) {
    var tax = income*0.1;
}
else {
    var tax = 1000*0.1 + (income - 1000) * 0.3;
}

console.log("tax is:", tax );
```

24. Bus ride.

filename: bus_ride.js

You should write a script that checks if there is room on a bus on a bus route with three stops.

- For each stop, the user must enter how many passengers are going on the bus. There is room for up to 30 passengers on the bus.
- If the bus is full, no one can get on.
- If more people want to go on, than there are remaining seats on the bus, only a few new passengers will get a seat.

We assume that all passengers go to the last station, so we do not have to take into account that someone gets off the bus along the way.

Example when running:

```
Station 1! How many people go on the bus?
> 14
Station 2! How many people go on the bus?
> 13
Station 3! How many people go on the bus?
> 5
The bus is full. 2 must walk.
```

Solution:

```javascript
var passenger = 0;

var station1 = parseInt(prompt("Station 1! How many people go on the
bus?"));
if (passenger + station1 >= 30) {
    console.log("The buss is full", passenger + station1 - 30, "have to
walk.");
    passenger = 30;
}
else {
    passenger += station1;
    console.log(station1 + " passengers are going on the bus.");
}

var station2 = parseInt(prompt("Station 2! How many people go on the
```

```javascript
bus?"));
if (passenger + station2 >= 30) {
    console.log("The buss is full", passenger + station2 - 30, "have to
walk.");
    passenger = 30;
}
else {
    passenger += station2;
    console.log(station2 + " passengers are going on the bus.");
}

var station3 = parseInt(prompt("Station 3! How many people go on the
bus?"));
if (passenger + station3 >= 30) {
    console.log("The buss is full", passenger + station3 - 30, "have to
walk.");
    passenger = 30;
}
else {
    passenger += station3;
    console.log(station3 + " passengers are going on the bus.");
}

console.log("The bus has arrived with " + passenger + " people on
board!");
```

25. Find out if the last digit is common.

Filename: common_numb.js

Given three integer variables, `a`, `b` and `c` with non-negative values that you choose yourself.
Check if two or more have the last digit in common, and print these out for the console.

Hint: see if you can use the modulo operator (%)!

Solution:

```js
var a = 43;
var b = 123;
var c = 324;

if (a % 10  == b  % 10) {
    console.log("a and b have the same last digit");
}
if (a % 10  == c  % 10) {
    console.log("a and c have the same last digit");
}
if (b % 10  == c  % 10) {
    console.log("b and c have the same last digit");
}
```

The operator % used here is called "modulo".
It calculates the remainder of the first number divided by the second number.
In the 10-number system, the rest of a number divided by 10 will always be the last digit of the number (try it yourself!).

*Note that we use **if** all the way, and not **else if**. The reason is that it is possible that several numbers have a common last digit - and then we want them all out!*