Problem 1

Given these values:

```
let x = 5;

let y = 4;
```

Print the result of the following operations:

1. $x + y$ = 5+4 = 9
2. $x - y$ = 5-4 = 1
3. $x * y + 3$ = 20+3 = 23
4. $x + y * 2$ = 5+8 = 13
5. $(x + y) * 2$ = 9x2 = 18
6. x / y = 5/4 = 1.25
7. x % y = 1
8. $(x - 2) * (y + 1)$ = 3*5 = 15

Problem 2

Given these values:

```
let a = 10; → number
let b = "Hello"; → string
let c = true; → Boolean
let d = {name:"Backend"}; → object
```

Print the datatype of each variable.

Problem 3

```
let x = 7;

let y = 10;
```

Print the result of the following:

1. `x > y` →False
2. `x >= y` →False
3. `x < y` →True
4. `x <= y` →True
5. `x == y` →False
6. `x === y` →False
7. `x != y` →True
8. `x !== y` →True

Problem 4

بالنسبة لترتيب الأولوية:
NOT ①
AND ②
OR ③

```
let a = true;
let b = false;
```

Print:

1. `a && b` →false
2. `a || b` →true
3. `!a` →False
4. `(a && !b)` →true
5. `(!a || b)` →False

Problem 5

Given:

```
let num = 20; let str = " years old";
```

Print the result of:

1. `num + str` = '20 years old'
2. `"Age: " + num` = 'Age: 20'
3. `"Result = " + (num + 5)` = 'Result = 25'
4. `"20" + 10` = '2010'
5. `(20 + 10) + " days"` '30 days'
6. `"JS" + " " + "Course"` = 'JS course'

Problem 6

Given:

```
let n = 10;
```

Apply each operator and print the result:

1. `n += 5` → n = 15
2. `n -= 3` → n = 7
3. `n *= 2` → n = 20
4. `n /= 5` → n = 2
5. `n %= 4` → n = 2

Problem 7

Given:

```
let x = 8;
```

Print:

1. `++x` = 9
2. `x++` then print x = 9 → X = 10
3. `--x` = 9
4. `x--` then print x = 9 → X = 8

Problem 8

Given:

```
let a = 4;
let b = 2;
let c = "3";
```

④ Multiplication converts the type to number automatically

Print the result of:

1. `a + b + c` = 6 + "3" = "63"
2. `a + (b + c)` = 4 + "23" = 423
3. `(a + b) * Number(c)` = 6 * 3 = 18
4. `a + b * c` = 4 + 6 = 10