Conditional statements

Problem 1. Exchange if greater

- Write an `if` statement that takes two double variables `a` and `b` and exchanges their values if the first one is greater than the second.
- As a result print the values `a` and `b`, separated by a space.

Examples:

a	b	result
5	2	2 5
3	4	3 4
5.5	4.5	4.5 5.5

Problem 2. Multiplication Sign

- Write a script that shows the sign (+, - or 0) of the product of three real numbers, without calculating it.
- Use a sequence of `if` operators.

Examples:

a	b	c	result
5	2	2	+
-2	-2	1	+

a	b	c	result
-2	4	3	-
0	-2.5	4	0
-1	-0.5	-5.1	-

Problem 3. The biggest of Three

- Write a script that finds the biggest of three numbers.
- Use nested `if` statements.

Examples:

a	b	c	biggest
5	2	2	5
-2	-2	1	1
-2	4	3	4
0	-2.5	5	5
-0.1	-0.5	-1.1	-0.1

Problem 4. Sort 3 numbers

- Sort 3 real values in descending order.
- Use nested `if` statements.

Note: Don't use arrays and the built-in sorting functionality.

Examples:

a	b	c	result
5	1	2	5 2 1
-2	-2	1	1 -2 -2
-2	4	3	4 3 -2
0	-2.5	5	5 0 -2.5
-1.1	-0.5	-0.1	-0.1 -0.5 -1.1
10	20	30	30 20 10
1	1	1	1 1 1

Problem 5. Digit as word

- Write a script that asks for a digit (`0-9`), and depending on the input, shows the digit as a word (in English).
- Print "`not a digit`" in case of invalid input.
- Use a `switch` statement.

Examples:

digit	result
2	two

digit	result
1	one
0	zero
5	five
-0.1	not a digit
hi	not a digit
9	nine
10	not a digit

Problem 6. Quadratic equation

- Write a script that reads the coefficients `a`, `b` and `c` of a quadratic equation $ax^2 + bx + c = 0$ and solves it (prints its real roots).
- Calculates and prints its real roots.

Note: Quadratic equations may have 0, 1 or 2 real roots.

Examples:

a	b	c	roots
2	5	-3	x1=-3; x2=0.5
-1	3	0	x1=3; x2=0

a	b	c	roots
-0.5	4	-8	x1=x2=4
5	2	8	no real roots

Problem 7. The biggest of five numbers

- Write a script that finds the greatest of given 5 variables.
- Use nested `if` statements.

Examples:

a	b	c	d	e	biggest
5	2	2	4	1	5
-2	-22	1	0	0	1
-2	4	3	2	0	4
0	-2.5	0	5	5	5
-3	-0.5	-1.1	-2	-0.1	-0.1

Problem 8. Number as words

- Write a script that converts a number in the range [0…999] to words, corresponding to its English pronunciation.

Examples:

numbers	number as words
0	Zero
9	Nine
10	Ten
12	Twelve
19	Nineteen
25	Twenty five
98	Ninety eight
98	Ninety eight
273	Two hundred and seventy three
400	Four hundred
501	Five hundred and one
617	Six hundred and seventeen
711	Seven hundred and eleven
999	Nine hundred and ninety nine