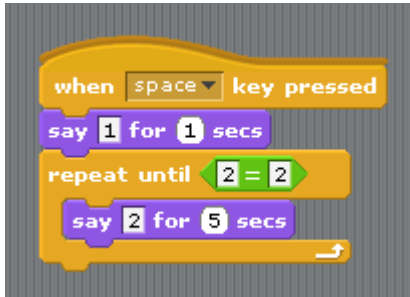


## Final test 2016

### Question 1

Look on the following script segment. The user presses the space key. Five seconds later what would the sprite on the screen will say?



1. 1
2. 2
3. 12
4. The sprite would not say anything at that time.

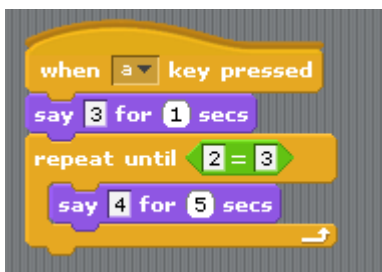
### Question 2

Write a new script, preferably shorter than the one in question 1, that has the same functionality as the script in question 1. In other words, viewers who see only the behavior of the character on the screen, rather than the script section, will never be able to tell the difference between the original script and the new script.

Describe all stages of the solution, that is, write down each and every consideration you have made and each step of the way. Explain your answer in detail, and explain why the script segments will produce the same result.

### Question 3

Look on the following script segment. The user presses the 'a' key. Five seconds later what would the sprite on the screen will say?



1. 3
2. 4
3. 34
4. The sprite would not say anything at that time

#### Question 4

You need to create a game, in which there are two sprites: a dog and a cat. Both move across the stage, and when the dog touches the cat it says "I caught you." The cat moves every second in three steps in a random direction. The dog moves five steps, every time that the user presses one of the arrows (up, down, left and right) according to the direction of the arrow. The cat begins the game looking to the right at a point where x is 100 and y is randomly selected between 200 and -200. The dog starts at a point where both X and Y are 100 and looks to the right. Describe every stage of your solution - each step from start to finish of all the animation scripts. List any considerations you have made and explain any decisions you took while writing the solution.

#### Question 5

What is "conditional execution"? Mark the correct answer and explain.

1. A loop
2. The block "if.. "
3. A series of instructions that are executed as long as a certain condition exists
4. The block " forever..."

#### Question 6

You need to build a game in which the cat asks the viewer to select a number from one to eight by pressing the space bar. Each press of the key will be counted, but if the user clicks more than eight times, it will be considered as eight. The user will then press the enter key to indicate the cat that he has finished pressing the space bar. At this point the cat will go 10 steps for each click, and will say "you have pressed x times on the space key", where X is the number of clicks. The cat starts at the center of the screen looking to the right and it advances at a steady pace of 10 steps per second.

Describe how you can create such a game. (If the description of the solution is clear enough, there is no need to write a Scratch script).

Explain the correctness of your solution and describe all the stages of thinking that led to the solution, including all the considerations and decisions you took.

#### Question 7

A student wrote a script for the cat, whereby the cat behaves in the following way: When the cat gets a message "check number" it checks whether the value of the number he holds in its memory can be divided by 14 (that is, the number that the cat remembers can be divided by 14 without a remainder). If the number is indeed can be divided by 14, the cat announces "yes". If the number cannot be divided by 14, the cat announces "no". The cat remembers the number in a variable called "test number".

You are requested to create an animation in which the dog asks the user to type a number. Then the dog tells the viewer whether this number can be divided by 7.

For example: the cat will say "yes" on the number 14 and "no" on 21, whereas the dog will say "yes" on the numbers 7 and 14 but "no" on the number 20.

A. Describe a way to solve this question (that is, describe how the dog should behave) without using the mod block.

B. Does the cat's script help you in any way?

C. Can you use the cat's script even if you cannot change it or even see it?