

COMPUTATIONAL THINKING TEST

Welcome to the Computational Thinking Test

* Required

INSTRUCTIONS

The test consists of 28 questions, divided into 7 pages with 4 questions each.

All questions have 4 answer options (A, B, C or D) from which only one is correct.

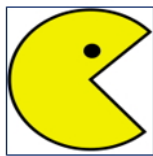
From the start of the test you have 45 minutes to do the best you can. It is not essential that you answer all questions.

To move forward from one page of the test to another, at the bottom of the page you must click on the 'Continue' button. VERY IMPORTANT: when you finish or the time ends you must move forward to the last page and click on the 'Submit' button to save your answers.

If you need to zoom in on any question to enlarge it, press 'Ctrl+' on your keyboard (or 'Ctrl-' to make it smaller).

Before starting the test, we are going to see three examples so you can familiarise yourself with the kind of questions that you will find, and the characters that will appear.

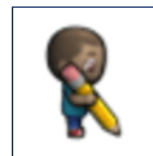
GOOD LUCK!



'Pac-Man'



Ghost



Artist

EXAMPLE I

In the first example you are asked which instructions take 'Pac-Man' to the ghost by the path marked out.

That is, to take 'Pac-Man' EXACTLY to the square where the ghost is (without going over or stopping short), and strictly following the path marked in yellow (without touching the walls, represented by the orange squares).

The correct answer in this example is B. Click the "B" button below the question.

Example I

Which instructions take 'Pac-Man' to the ghost by the path marked out?

Option A

Option B
 ✓

Option C

Option D

1. Example I *

Select the correct answer (in this example, the correct answer is B)
 Mark only one oval.

- A
- B
- C
- D

EXAMPLE II



In the second example you are asked again which instructions take 'Pac-Man' to the ghost by the path marked out. However, in this question the options are presented as groups of instruction blocks rather than arrows.

Remember that the question asks you to take 'Pac-Man' EXACTLY to the square where the ghost is (without going over or stopping short), and strictly following the path marked in yellow (without touching the walls, represented by the orange squares).

The correct answer in this example is C. Click the "C" button below the question.

Example II

Which instructions take 'Pac-Man' to the ghost by the path marked out?

Option A

- move forward
- turn left ↶
- move forward
- move forward

Option B

- move forward
- turn right ↷
- move forward
- move forward

Option C

- move forward
- move forward
- turn left ↶
- move forward

Option D

- move forward
- move forward
- turn right ↷
- move forward

✓

2. Example II *

Select the correct answer (in this example, the correct answer is C)
Mark only one oval.

- A
- B
- C
- D

EXAMPLE III


In the third example you are asked which instructions the artist should follow to draw the shape on screen. That is, how to MOVE the pencil to draw the shape.

The MOVE instruction pushes the pencil whilst drawing, while the JUMP instruction makes the artist jump to another location without drawing.

The grey arrow indicates the direction of the first movement of the pencil.

The correct answer in this example is A. Click the "A" button below the question.

Example III

<p>Which instructions should the artist follow to draw the shape? The short side measures 50 pixels and the long side measures 100 pixels.</p> 	<p>Option A</p> <pre> move forward by 50 pixels turn left by 90 degrees move forward by 100 pixels </pre>	<p>Option B</p> <pre> move forward by 50 pixels turn right by 90 degrees move forward by 100 pixels </pre>
	<p>Option C</p> <pre> move forward by 100 pixels turn left by 90 degrees move forward by 50 pixels </pre>	<p>Option D</p> <pre> move forward by 100 pixels turn right by 90 degrees move forward by 50 pixels </pre>

3. Example III *

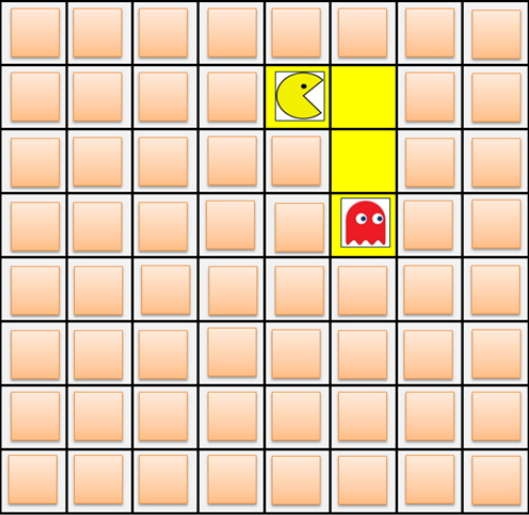




Select the correct answer (in this example, the correct answer is A)
Mark only one oval.

- A
- B
- C
- D

QUESTIONS 1 - 4

On this page you will find questions 1 to 4.

Question 1

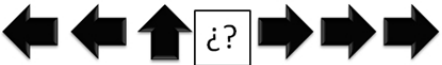
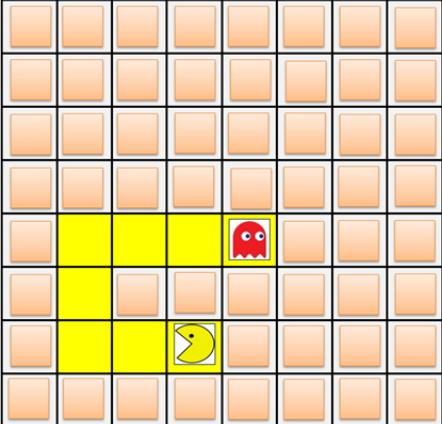




<p>Which instructions take 'Pac-Man' to the ghost by the path marked out?</p> 	<p>Option A</p> 
	<p>Option B</p> 
	<p>Option C</p> 
	<p>Option D</p> 

4. Question 1

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 2

<p><i>Which step is missing in the instructions below to take 'Pac-Man' to the ghost by the path marked out?</i></p> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div>	<p>Option A</p> <div style="text-align: center;"></div> <hr/> <p>Option B</p> <div style="text-align: center;"></div> <hr/> <p>Option C</p> <div style="text-align: center;"></div> <hr/> <p>Option D</p> <div style="text-align: center;"></div>
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5. Question 2

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 3

The instructions should take 'Pac-Man' to the ghost by the path marked out. In which step of the instructions is there a *mistake*?

move forward

→ Step A

turn left ↺

→ Step B

move forward

→ Step C

turn left ↺

→ Step D

move forward

6. Question 3

Select the step in which there is a mistake
Mark *only one* oval.

- A
- B
- C
- D

Question 4

Which instructions should the artist follow to draw the square? Each of the sides of the square measures 100 pixels.

Option A

- move forward by 100 pixels
- turn right by 90 degrees
- move forward by 100 pixels
- turn left by 90 degrees
- move forward by 100 pixels
- turn right by 90 degrees
- move forward by 100 pixels

Option B

- move forward by 25 pixels
- turn right by 90 degrees
- move forward by 25 pixels
- turn left by 90 degrees
- move forward by 25 pixels
- turn right by 90 degrees
- move forward by 25 pixels

Option C

- move forward by 50 pixels
- turn right by 90 degrees
- move forward by 50 pixels
- turn right by 90 degrees
- move forward by 50 pixels
- turn right by 90 degrees
- move forward by 50 pixels

Option D

- move forward by 100 pixels
- turn right by 90 degrees
- move forward by 100 pixels
- turn right by 90 degrees
- move forward by 100 pixels
- turn right by 90 degrees
- move forward by 100 pixels

7. Question 4

Select the correct answer
Mark only one oval.

- A
 B
 C
 D

QUESTIONS 5 - 8

On this page you will find questions 5 to 8.

Question 5

<p>Which instructions take 'Pac-Man' to the ghost by the path marked out?</p> <p>The grid is 10 columns wide and 10 rows high. Pac-Man is in the second row, second column. A red ghost is in the second row, sixth column. A yellow path is highlighted from the second row, second column to the second row, sixth column.</p>	<p>Option A</p> <p>A grey square button containing a white circle with a black right-pointing arrow. Above the circle is a small white box with the text "x 5".</p>	<p>Option B</p> <p>A grey square button containing a white circle with a black right-pointing arrow. Above the circle is a small white box with the text "x 3".</p>
	<p>Option C</p> <p>A grey square button containing a white circle with a black right-pointing arrow. Above the circle is a small white box with the text "x 4".</p>	<p>Option D</p> <p>A grey square button containing a white circle with a black right-pointing arrow. Above the circle is a small white box with the text "x 2".</p>

8. Question 5

Select the correct answer
Mark only one oval.

- A
 B
 C
 D

Question 6

How many times must the sequence be repeated to take 'Pac-Man' to the ghost by the path marked out?

Option A	× 2
Option B	× 1
Option C	× 4
Option D	× 3

9. Question 6

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 7

The instructions should make the artist draw the following rectangle **once** (50 pixels wide and 100 pixels high). In which step of the instructions is there a **mistake**?

10. Question 7

Select the step in which there is a mistake
Mark only one oval.

- A
- B
- C
- D

Question 8

<p style="font-size: small;">Which instructions take 'Pac-Man' to the ghost by the path marked out?</p>	<p>Option A</p> <pre> repeat 4 times do repeat 3 times do move forward turn right 90 move forward </pre>	<p>Option B</p> <pre> repeat 3 times do repeat 4 times do move forward turn right 90 move forward </pre>
	<p>Option C</p> <pre> repeat 3 times do repeat 4 times do move forward turn right 90 move forward </pre>	<p>Option D</p> <pre> repeat 4 times do move forward repeat 3 times do turn right 90 move forward </pre>

11. Question 8

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

QUESTIONS 9 - 12

On this page you will find questions 9 to 12.

Question 9

Which instructions take 'Pac-Man' to the ghost by the path marked out?

Option A	Option B
Repeat until the...	Repeat until the...
Option C	Option D
Repeat until the...	Repeat until the...

12. Question 9

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 10

Which step is missing in the instructions below to take 'Pac-Man' to the ghost by the path marked out?

Option A	Option B
Option C	Option D
	Not missing any step

13. Question 10

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 11


The instructions should take 'Pac-Man' to the ghost by the path marked out. In which step of the instructions is there a **mistake**?

14. Question 11

Select the step in which there is a mistake
Mark only one oval.

- A
- B
- C
- D

Question 12

<p>Which instructions should the artist follow to draw the ladder that reaches the flower? There are 30 pixels between each rung.</p> 	<p>Option A</p> <pre> Repeat until the flower do repeat 4 times do move forward by 30 pixels turn right by 90 degrees jump forward by 30 pixels </pre>	<p>Option B</p> <pre> Repeat until the flower do repeat 4 times do move forward by 120 pixels turn right by 90 degrees jump forward by 30 pixels </pre>
	<p>Option C</p> <pre> Repeat until the flower do repeat 4 times do move forward by 30 pixels turn right by 90 degrees jump forward by 210 pixels </pre>	<p>Option D</p> <pre> Repeat until the flower do repeat 7 times do move forward by 30 pixels turn right by 90 degrees jump forward by 30 pixels </pre>

15. Question 12

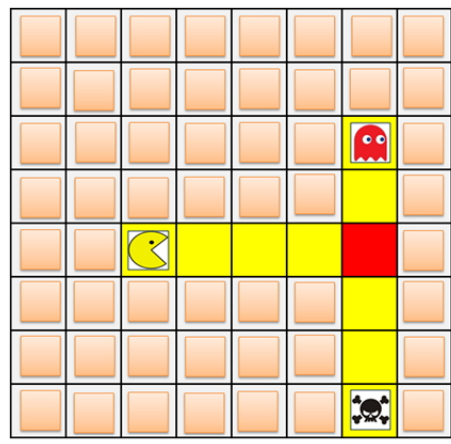
Select the correct answer
Mark only one oval.

- A
- B
- C
- D

QUESTIONS 13 - 16

On this page you will find questions 13 to 16.

Question 13

<p>Which instructions take 'Pac-Man' to the ghost by the path marked out?</p> 	<p>Option A</p> <pre> Repeat until the... If on... ↑ </pre>	<p>Option B</p> <pre> Repeat until the... If on... ↑↑ </pre>
	<p>Option C</p> <pre> Repeat until the... If on... ↑ </pre>	<p>Option D</p> <pre> Repeat until the... If on... ↑↑ </pre>

16. Question 13

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 14

<p>Which instructions take 'Pac-Man' to the ghost by the path marked out?</p>	<p>Option A</p> <pre> repeat until [ghost icon] do move forward if path to the right do turn right </pre>	<p>Option B</p> <pre> repeat until [ghost icon] do turn right if path to the right do move forward </pre>
	<p>Option C</p> <pre> repeat until [ghost icon] do move forward if path to the right do turn left </pre>	<p>Option D</p> <pre> repeat until [ghost icon] do move forward if path to the left do turn left </pre>

17. Question 14

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 15

What is missing in the instructions below to take 'Pac-Man' to the ghost by the path marked out?

Option A

Option B

Option C

Option D
Both option A and option C are correct

18. Question 15

Select the correct answer
 Mark only one oval.

- A
- B
- C
- D

Question 16

The instructions should take 'Pac-Man' to the ghost by the path marked out.
 In which step of the instructions is there a **mistake**?

```

repeat until 
do
  move forward
  if path to the left 
  do turn left 
  if path to the right 
  do move forward
    
```

Step A points to the 'if path to the left' block.
 Step B points to the 'do turn left' block.
 Step C points to the 'if path to the right' block.
 Step D points to the 'do move forward' block.

19. Question 16

Select the step in which there is a mistake
Mark *only one* oval.

- A
- B
- C
- D

QUESTIONS 17 - 20

On this page you will find questions 17 to 20.

Question 17

<p>Which instructions take 'Pac-Man' to the ghost by the path marked out?</p>	<p>Option A</p>	<p>Option B</p>
	<p>Option C</p>	<p>Option D</p>

20. Question 17

Select the correct answer
Mark *only one* oval.

- A
- B
- C
- D

Question 18

Which instructions take 'Pac-Man' to the ghost by the path marked out?

Option A

```
repeat until [ghost icon]
do
  if path ahead
  do
    move forward
  else
    turn left
```

Option B

```
repeat until [ghost icon]
do
  if path ahead
  do
    move forward
  else
    turn right
```

Option C

```
repeat until [ghost icon]
do
  if path to the right
  do
    turn right
  else
    move forward
```

Option D

```
repeat until [ghost icon]
do
  if path to the left
  do
    turn left
  else
    move forward
```

21. Question 18

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 19

The instructions should take 'Pac-Man' to the ghost by the path marked out. In which step of the instructions is there a *mistake*?

Step A

Step B

Step C

Step D

22. Question 19

Select the step in which there is a mistake
 Mark only one oval.

- A
- B
- C
- D

Question 20

Which step is missing in the instructions below to take 'Pac-Man' to the ghost by the path marked out?

Option A 	Option B
Option C 	Option D Not missing any step

23. Question 20

Select the correct answer
 Mark only one oval.

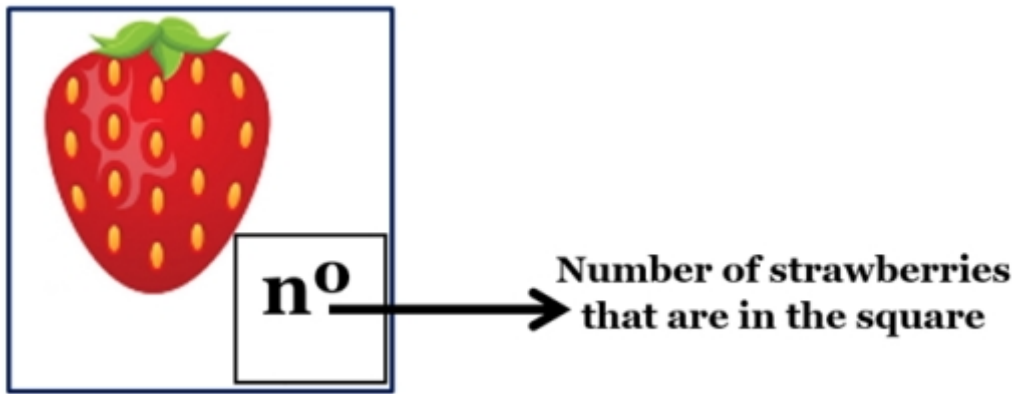
- A
- B
- C
- D

QUESTIONS 21 - 24

On this page you will find questions 21 to 24.

IMPORTANT: READ CAREFULLY

In this group of questions the image of a strawberry appears in some squares. The number on the bottom right of the image shows how many strawberries are in the square.



Question 21

Which instructions take 'Pac-Man' to the strawberries by the path marked out and tell 'Pac-Man' to eat all the strawberries shown?

	<p>Option A</p> <pre> while path ahead do move forward repeat 3 times do Eat 1 strawberry </pre>	<p>Option B</p> <pre> while path ahead do move forward repeat 4 times do Eat 1 strawberry </pre>
	<p>Option C</p> <pre> while path ahead do move forward repeat 5 times do Eat 1 strawberry </pre>	<p>Option D</p> <pre> while path ahead do move forward repeat 3 times do Eat 1 strawberry </pre>

24. Question 21

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 22

Which instructions take 'Pac-Man' to the strawberries by the path marked out and tell 'Pac-Man' to eat all the strawberries shown?

Option A

```

while path ahead
do
  repeat 5 times
  do
    move forward
  repeat 3 times
  do
    Eat 1 strawberry
            
```

Option B

```

while path ahead
do
  move forward
  repeat 3 times
  do
    Eat 1 strawberry
            
```

Option C

```

while path ahead
do
  repeat 3 times
  do
    move forward
  repeat 5 times
  do
    Eat 1 strawberry
            
```

Option D

```

while path ahead
do
  move forward
  repeat 3 times
  do
    Eat 1 strawberry
            
```

25. Question 22

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 23

What is missing in the instructions below to take 'Pac-Man' to the strawberries by the path marked out and tell 'Pac-Man' to eat all the strawberries shown?

```

while path ahead
do
  repeat ??????????????
  do
    move forward
  if any strawberries
  do
    Eat 1 strawberry
            
```

Option A

1 time

Option B

2 times

Option C

3 times

Option D

5 times

26. Question 23

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 24

<p>Which step is missing in the instructions below to take 'Pac-Man' to the strawberries by the path marked out and tell 'Pac-Man' to eat all the strawberries (unknown number)?</p> <pre>while path ahead do move forward if any strawberries do ?????????????????????? do Eat 1 strawberry</pre>	<p>Option A</p> <p>While path ahead</p> <hr/> <p>Option B</p> <p>While no path ahead</p> <hr/> <p>Option C</p> <p>While any strawberries</p> <hr/> <p>Option D</p> <p>While no strawberries</p>
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27. Question 24

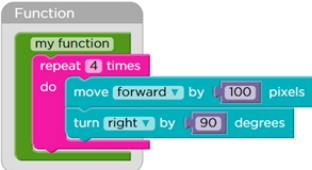


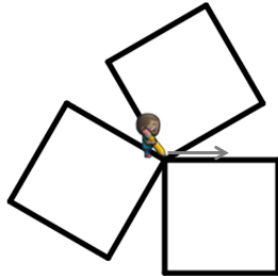


Select the correct answer
Mark only one oval.

- A
- B
- C
- D

QUESTIONS 25 - 28

On this last page you will find questions 25 to 28. Don't forget to click on the 'SUBMIT' button when you are finished.

Question 25

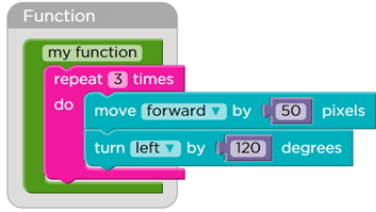


<p>The following set of instructions is called 'my function', and draws one square of 100 pixels each side:</p>  <p>Which instructions should the artist follow to draw the following design? Each side of each square measures 100 pixels.</p>	<p>Option A</p> 	<p>Option B</p> 
	<p>Option C</p> 	<p>Option D</p> 

28. Question 25

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 26

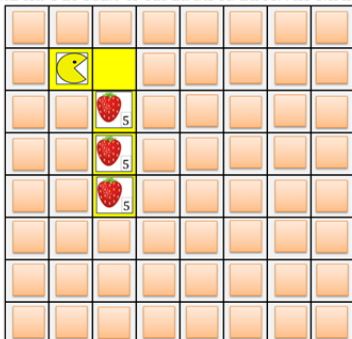
<p>The following set of instructions is called 'my function', and draws one triangle of 50 pixels each side:</p> 	<p>Option A</p> <p>15</p>	<p>Option B</p> <p>5</p>
<p>The instructions below should make the artist draw the following design. Each side of each triangle measures 50 pixels. What is missing in the instructions?</p>  	<p>Option C</p> <p>4</p>	<p>Option D</p> <p>3</p>

29. Question 26

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 27

<p>The following set of instructions is called 'get 5':</p> <div style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center; margin: 0;">Function</p> <pre style="margin: 0;"> get 5 repeat 5 times do Eat 1 strawberry </pre> </div> <p>Which instructions take 'Pac-Man' to the strawberries by the path marked out and tell 'Pac-Man' to eat all the strawberries shown?</p> 	<p>Option A</p> <pre style="margin: 0;"> move forward turn right repeat 3 times do move forward get 5 </pre>	<p>Option B</p> <pre style="margin: 0;"> move forward turn right repeat 3 times do get 5 move forward </pre>
	<p>Option C</p> <pre style="margin: 0;"> move forward turn right repeat 5 times do move forward get 5 </pre>	<p>Option D</p> <pre style="margin: 0;"> move forward turn right repeat 5 times do get 5 move forward </pre>

30. Question 27

Select the correct answer
Mark only one oval.

- A
- B
- C
- D

Question 28

The following set of instructions is called 'move and get 4':

Function

```

move and get 4
  move forward
  turn right
  move forward
  repeat 4 times
    do Eat 1 strawberry
  turn left
        
```

What is missing in the instructions below to take 'Pac-Man' to the strawberries by the path marked out and tell 'Pac-Man' to eat all the strawberries shown?

```

repeat ??? times
do move and get 4
        
```

Option A 3	Option B 4
Option C 5	Option D 6

31. Question 28

Select the correct answer
Mark only one oval.

- A
- B
- C
- D