

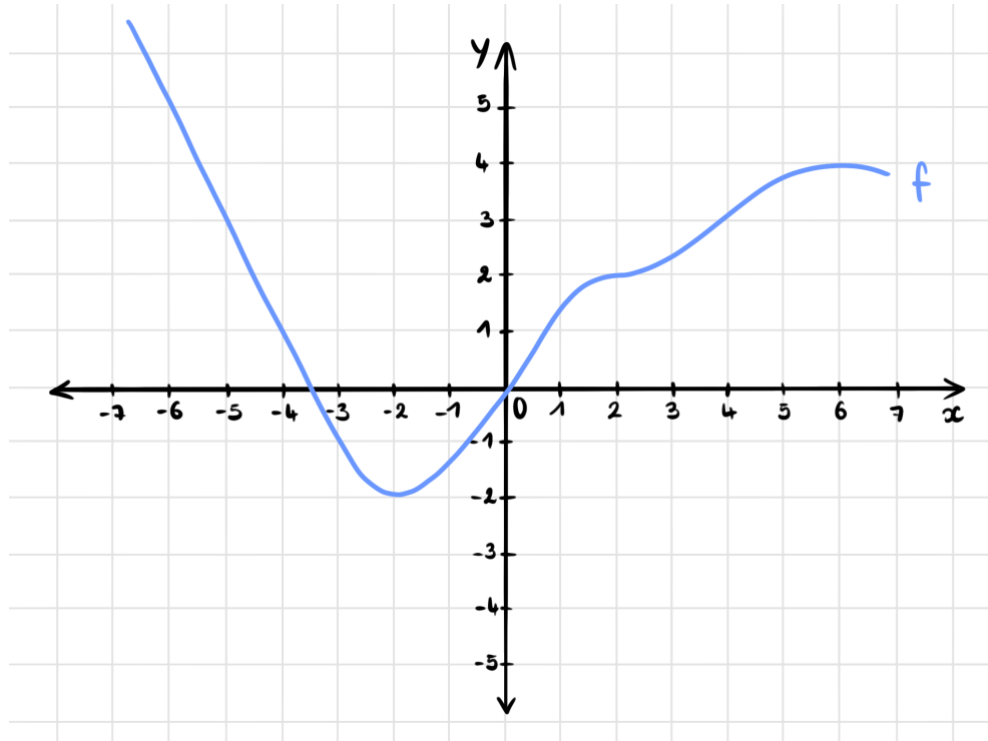
# Questionnaire 1.1

Participant Id = \_\_\_\_\_

Please fill in the following questionnaire. This questionnaire is not part of your curriculum and will not influence your grade in any way. If you do not know how to solve a question, you can simply skip it.

## Section 1.

Please, answer the questions in this section using the following graph.



a. What is the value of  $f(6)$ ?

$f(6) =$  \_\_\_\_\_

b. What is the value of  $f(-2)$ ?

$f(-2) =$  \_\_\_\_\_

c. What is the value of  $f(-5)$ ?

$f(-5) =$  \_\_\_\_\_

d. On the interval  $]-6, -2[$ ,  $f$  is:

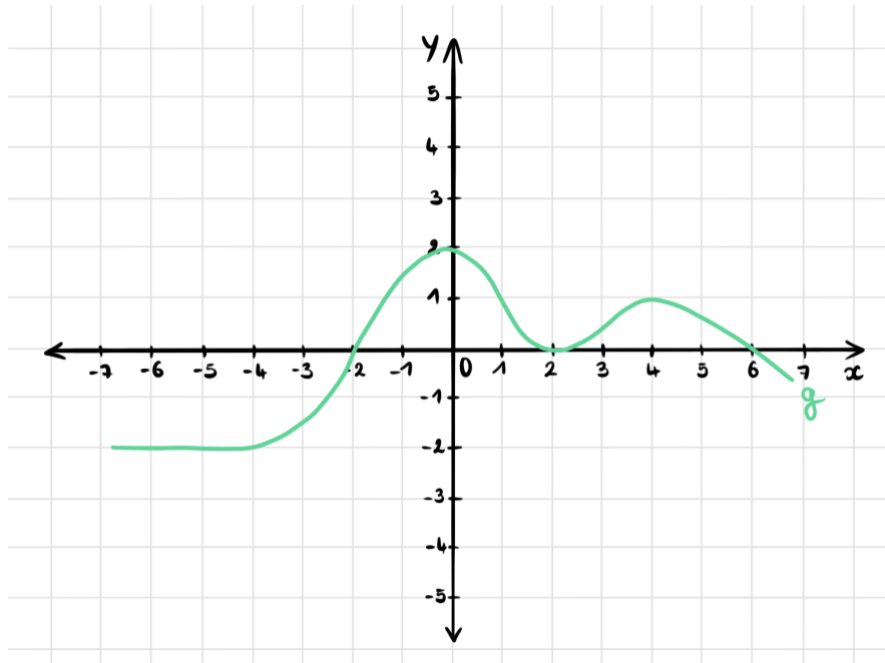
- Increasing
- Decreasing
- Constant
- None of the above

e. On the interval  $]2, 6[$ ,  $f$  is:

- Increasing
- Decreasing
- Constant
- None of the above

**Section 2.**

Please, answer the questions in this section using the following graph. All these questions focus on the interval  $[-6,6]$ .



a. Select all the values where  $g$  is null (that is,  $g(x) = 0$ ).

- 6  -5  -4  -3  -2  -1  0  1  2  3  4  5  6

b. On which interval(s) is  $g$  positive?

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c. On which interval(s) is  $g$  negative?

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**Section 3.**

For this section, please use the graph of the function  $g$  above.

a. What is the maximum value of  $g$ ?

- 5  -4  -3  -2  -1  0  1  2  3  4  5

b. What is the minimum value of  $g$ ?

- 5  -4  -3  -2  -1  0  1  2  3  4  5

c. Does  $g$  have any local maximum?

Yes  No

If yes, which one(s)? Select all the values of  $x$  where  $g(x)$  is a local maximum.

- 7  -6  -5  -4  -3  -2  -1  0  1  2  3  4  5  6  7

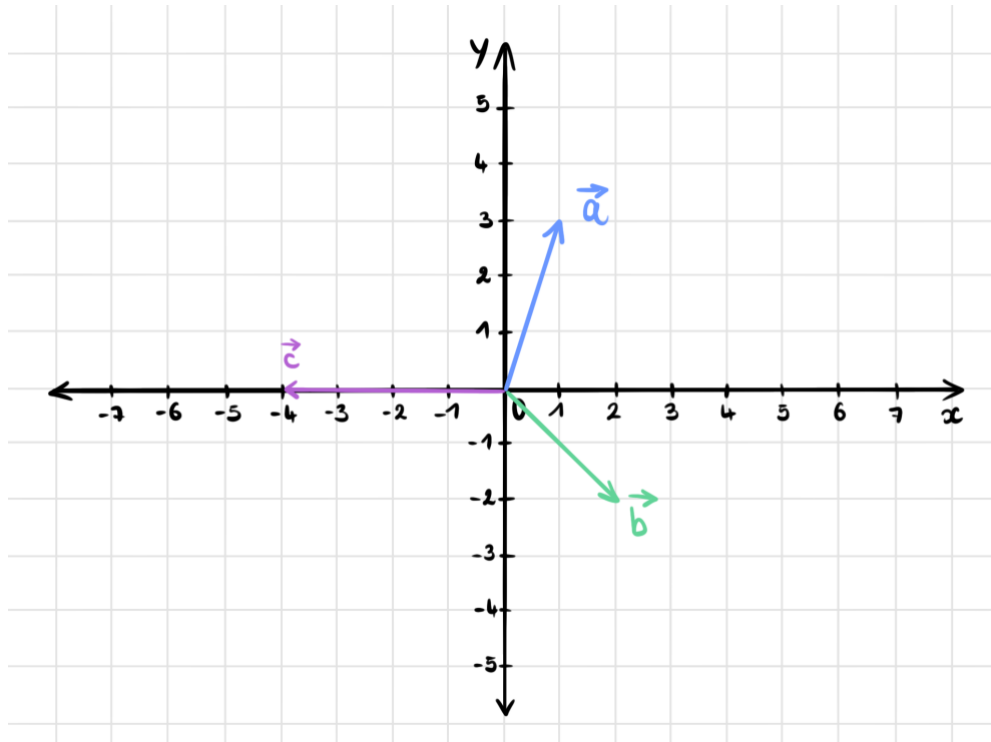
d. Does  $g$  have any local minimum?

Yes  No

If yes, which one(s)? Select all the values of  $x$  where  $g(x)$  is a local minimum.

- 7  -6  -5  -4  -3  -2  -1  0  1  2  3  4  5  6  7

Section 4.



a. In the above picture, what are the coordinates of vector a?  
The coordinates of a are (\_\_\_\_,\_\_\_\_)

b. In the above picture, what are the coordinates of vector b?  
The coordinates of b are (\_\_\_\_,\_\_\_\_)

c. In the above picture, what are the coordinates of vector c?  
The coordinates of c are (\_\_\_\_,\_\_\_\_)

# Questionnaire 1.2

Participant Id = \_\_\_\_\_

Please fill in all the questions of the following questionnaire.

## Gender

- Female       Male       Other       Prefer not to say

## Age

\_\_\_\_\_ years old

## Height

\_\_\_\_\_ cm

## Mother Tongue

\_\_\_\_\_

**Occupation (if you are a student, please indicate your grade, school, and program)**

\_\_\_\_\_

**Are you a repeating student?**

- Yes       No

**What is your math grade?**

\_\_\_\_\_/6

**I play video games (console, desktop, or mobile)**

- Every day  
 Several times a week  
 Once a week  
 Once a month  
 Less

**I use a VR headset (Oculus, Vive, etc)**

- Every day  
 Several times a week  
 Once a week  
 Once a month  
 Less

**I use a tablet (iPad, Galaxy tab, etc)**

- Every day
- Several times a week
- Once a week
- Once a month
- Less

**I use movable controllers (like Wii remote controllers, VR controllers, etc)**

- Every day
- Several times a week
- Once a week
- Once a month
- Less

**I use a hand tracking system (Ultraleap, Leap motion, Oculus Quest, etc)**

- Every day
- Several times a week
- Once a week
- Once a month
- Less

**Name your three favorite hobbies (number 1 is your favorite)**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**What is your dominant hand?**

- Right       Left       Both

**Do you have to wear glasses or contact lenses?**

- Glasses
- Contact lenses
- Nothing

**If you wear glasses, will you keep your glasses during the Virtual Reality experience?**

- Yes       No

# Questionnaire 1.3

Participant Id = \_\_\_\_\_

Please fill in all the questions of the following questionnaire. For each of the statements, indicate how much it applies to you from “Not true at all about me” (1) to “Very true about me” (7) by checking the according box.

**I notice differences in the way my body reacts to various foods.**

Not true at all about me ←  1 —  2 —  3 —  4 —  5 —  6 —  7 → Very true about me

**I can always tell when I bump myself whether or not it will become a bruise.**

Not true at all about me ←  1 —  2 —  3 —  4 —  5 —  6 —  7 → Very true about me

**I always know when I've exerted myself to the point where I'll be sore the next day.**

Not true at all about me ←  1 —  2 —  3 —  4 —  5 —  6 —  7 → Very true about me

**I am always aware of changes in my energy level when I eat certain foods.**

Not true at all about me ←  1 —  2 —  3 —  4 —  5 —  6 —  7 → Very true about me

**I know in advance when I'm getting the flu.**

Not true at all about me ←  1 —  2 —  3 —  4 —  5 —  6 —  7 → Very true about me

**I know I'm running a fever without taking my temperature.**

Not true at all about me ←  1 —  2 —  3 —  4 —  5 —  6 —  7 → Very true about me

**I can distinguish between tiredness because of hunger and tiredness because of lack of sleep.**

Not true at all about me

A horizontal scale with seven numbered boxes (1 to 7) connected by lines. Arrows point outwards from the first and last boxes.

Very true about me

**I can accurately predict what time of day lack of sleep will catch up with me.**

Not true at all about me

A horizontal scale with seven numbered boxes (1 to 7) connected by lines. Arrows point outwards from the first and last boxes.

Very true about me

**I am aware of a cycle in my activity level throughout the day.**

Not true at all about me

A horizontal scale with seven numbered boxes (1 to 7) connected by lines. Arrows point outwards from the first and last boxes.

Very true about me

**I DON'T notice seasonal rhythms and cycles in the way my body functions.**

Not true at all about me

A horizontal scale with seven numbered boxes (1 to 7) connected by lines. Arrows point outwards from the first and last boxes.

Very true about me

**As soon as I wake up in the morning I know how much energy I'll have during the day.**

Not true at all about me

A horizontal scale with seven numbered boxes (1 to 7) connected by lines. Arrows point outwards from the first and last boxes.

Very true about me

**I can tell when I go to bed how well I will sleep that night.**

Not true at all about me

A horizontal scale with seven numbered boxes (1 to 7) connected by lines. Arrows point outwards from the first and last boxes.

Very true about me

**I notice distinct body reactions when I'm fatigued.**

Not true at all about me

A horizontal scale with seven numbered boxes (1 to 7) connected by lines. Arrows point outwards from the first and last boxes.

Very true about me

**I notice specific body responses to changes in the weather.**

Not true at all about me

←  1 —  2 —  3 —  4 —  5 —  6 —  7 →

Very true about me

**I can predict how much sleep I will need at night in order to wake up refreshed.**

Not true at all about me

←  1 —  2 —  3 —  4 —  5 —  6 —  7 →

Very true about me

**When my exercise habits change, I can predict very accurately how that will affect my energy level.**

Not true at all about me

←  1 —  2 —  3 —  4 —  5 —  6 —  7 →

Very true about me

**There seems to be a "best" time for me to go to sleep at night.**

Not true at all about me

←  1 —  2 —  3 —  4 —  5 —  6 —  7 →

Very true about me

**I notice specific bodily reactions to being overhungry.**

Not true at all about me

←  1 —  2 —  3 —  4 —  5 —  6 —  7 →

Very true about me



# Questionnaire 1.4

Participant Id = \_\_\_\_\_

Please fill in all the questions of the following questionnaire. Please indicate how anxious these situations make you feel, from "Low anxiety" (1) to "High anxiety" (5).

## Having to use the tables in the back of a math book

Low anxiety      ← 

1	2	3	4	5

 →      High anxiety

## Thinking about an upcoming math test 1 day before

Low anxiety      ← 

1	2	3	4	5

 →      High anxiety

## Watching a teacher work an algebraic equation on the blackboard

Low anxiety      ← 

1	2	3	4	5

 →      High anxiety

## Taking an examination in a math course

Low anxiety      ← 

1	2	3	4	5

 →      High anxiety

## Being given a homework assignment of many difficult problem that is due the next class meeting

Low anxiety      ← 

1	2	3	4	5

 →      High anxiety

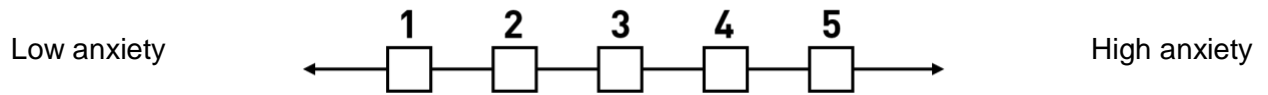
## Listening to a lecture in math class

Low anxiety      ← 

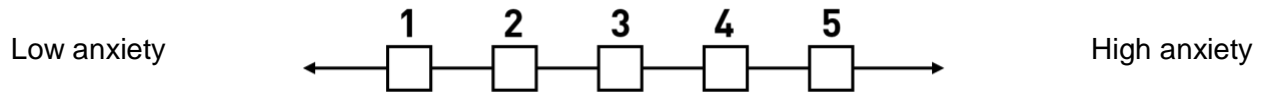
1	2	3	4	5

 →      High anxiety

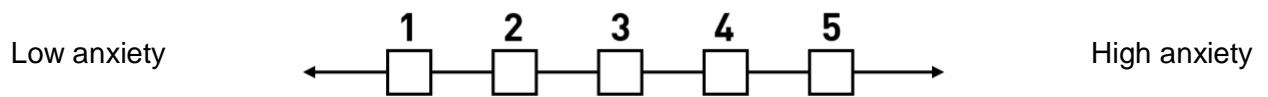
**Listening to another student explain a math formula**



**Being given a "pop" quiz in math class**



**Starting a new chapter in a math book**



## References

Shields, S. A., Mallory, M. E., & Simon, A. (1989). The body awareness questionnaire: reliability and validity. *Journal of personality Assessment*, 53(4), 802-815.

Hopko, D. R., Mahadevan, R., Bare, R. L., & Hunt, M. K. (2003). The abbreviated math anxiety scale (AMAS) construction, validity, and reliability. *Assessment*, 10(2), 178-182.