

FRUSTRATION IN LEARNING MATHEMATICS

QUESTIONNAIRE

There are 76 items in the questionnaire. Answering it will take about 20 minutes of your time.

When an item in the questionnaire mentions a "math course", it refers to the MATH200-209 course you took in the summer 2003.

Most of the items are statements with which you may agree, disagree or be neutral. Circle the answer you choose.

Any comments on the questions are most welcome.

- 1 I am female / male
- 2 I was 21 or over when I entered university
Agree Disagree Neutral
- 3 I spent some time away of formal education
Agree Disagree Neutral
- 4 I have always liked solving problems
Agree Disagree Neutral
- 5 I have always liked memorizing rules
Agree Disagree Neutral
- 6 I could never understand math
Agree Disagree Neutral
- 7 I am wiser and more motivated than my younger colleagues
Agree Disagree The item doesn't apply to me
- 8 I like studying math
Agree Disagree Neutral
- 9 I was enthusiastic about going back to school
Agree Disagree Neutral
- 10 I was terrified of having to study math again
Agree Disagree Neutral
- 11 It is difficult at my age to be in the role of a student again
Agree Disagree The item doesn't apply to me

- 12 I wasn't happy with my results in the course
Agree Disagree Neutral
- 13 I would rather NOT take this course if I had a choice
Agree Disagree Neutral
- 14 I have sometimes been angry at the teacher in this course
Agree Disagree Neutral
- 15 I have always hated math because it is too abstract
Agree Disagree Neutral
- 16 I have always loved math because it is abstract
Agree Disagree Neutral
- 17 I don't like algebra
Agree Disagree Neutral
- 18 I like working with concrete numbers
Agree Disagree Neutral
- 19 I like it when the teacher helps me to see "the big picture"
Agree Disagree Neutral
- 20 I usually want to understand every single detail
Agree Disagree Neutral
- 21 If I can't solve a problem in 10 minutes, I give up
Agree Disagree Neutral
- 22 To succeed in math one has to work hard
Agree Disagree Neutral
- 23 To succeed in math one has to be gifted (i.e. born to be good at it)
Agree Disagree Neutral
- 24 To succeed in math one needs to be well-organized
Agree Disagree Neutral
- 25 I will never try to get a university degree
Agree Disagree Neutral
- 26 I did not work hard enough in this course
Agree Disagree Neutral
- 27 I sometimes couldn't come to class
Agree Disagree
- 28 I often couldn't come to class
Agree Disagree

- 29 I never missed a class
Agree Disagree
- 30 I have many commitments outside of studying
Agree Disagree Neutral
- 31 I usually don't do well on tests
Agree Disagree Neutral
- 32 I used to be a good student
Agree Disagree Neutral
- 33 To succeed in math in high school it was enough to understand what was done in class
Agree Disagree Neutral
- 34 To succeed in the course it was necessary to know a lot of math already
Agree Disagree Neutral
- 35 To succeed in the course it was necessary to memorize many rules
Agree Disagree Neutral
- 36 In the course, too much work was left to be done at home
Agree Disagree Neutral
- 37 In the course, the teacher was going too fast
Agree Disagree Neutral
- 38 At the university one is expected to be an autonomous learner
Agree Disagree Neutral
- 39 In the course, the teacher did not provide us with clear and easy methods
Agree Disagree Neutral
- 40 In the course, the teacher was not clear about what we have to do to get good marks
Agree Disagree Neutral
- 41 In the course, the teacher expected us to do problems that were not discussed in class
Agree Disagree Neutral
- 42 In the course, the teacher avoided challenging problems
Agree Disagree Neutral
- 43 In the course, the teacher wanted me to completely change my way of thinking
Agree Disagree Neutral
- 44 In the course, I was allowed to use whatever methods I liked
Agree Disagree Neutral
- 45 In the course, there was very little feedback on my performance.
Agree Disagree Neutral

- 46 In the course, the teacher used to encourage us
 Agree Disagree Neutral
- 47 In the course, the teacher understood my difficulty to manage life and school duties
 Agree Disagree Neutral
- 48 In high school, I used to follow my teacher's instructions
 Agree Disagree Neutral
- 49 In high school, teachers were usually clear about rules and methods to apply
 Agree Disagree Neutral
- 50 I expect my teachers to be supportive even with those who cannot keep the pace
 Agree Disagree Neutral
- 51 In my next math course, I'll make sure I understand why the rules work
 Agree Disagree Neutral
- 52 I understand math
 Agree Disagree Neutral
- 53 I have always been good at math
 Agree Disagree Neutral
- 54 I learn better if I can do it at my own pace
 Agree Disagree Neutral
- 55 I need feedback on my solutions in order to learn
 Agree Disagree Neutral
- 56 I need the teacher to tell me if I am right or wrong
 Agree Disagree Neutral
- 57 It was easier for me to learn for an exam in the past
 Agree Disagree Neutral
- 58 I found it hard to concentrate in class
 Agree Disagree Neutral
- 59 In the course, I had the impression that my thinking was different from that of other students
 Agree Disagree Neutral
- 60 In the course, I had the impression that my thinking was different from the teacher's
 Agree Disagree Neutral
- 61 When I entered the course, I had poor background knowledge
 Agree Disagree Neutral

- 62 Math is hard
 Agree Disagree Neutral
- 63 The math in this course was very different from what I've seen so far
 Agree Disagree Neutral
- 64 I'll never use most of the material we covered in this course
 Agree Disagree Neutral
- 65 I took this course, because (you can choose several options)
- (a) I'll need the math in my profession
 - (b) I thought I'll need the math
 - (c) The academic advisor told me to take it
 - (d) Math helps developing my analytical skills
 - (e) I want to get a better paid job
 - (f) Other (explain)
- 66 Do you like math?
 Yes No Neutral
 Explain why.
- 67 If you did well in the course, complete the sentence
 I did well in the course because ...
- 68 If you didn't do as well as you had hoped, complete the sentence
 I didn't do well in the course because ...
- 69 Do you remember a situation where you were not graded fairly?
 Yes No
 Optional: If yes, describe it shortly
- 70 Which do you like better?
 (a) $2x - 1 < 2$
 (b) $2x - 1 < a$
- 71 Which do you like better?
 (a) Product A costs 18.5 dollars more than product B.
 (b) $y = x + 18.5$

72 In a final examination, the expected answer to a question was the fraction $\frac{1}{2}$.
A student answered " $\frac{2}{4}$ ". This was (choose one):

- (a) No mistake
- (b) A minor mistake
- (c) A major mistake

Any comments? (optional):...

73 In a final examination, the expected answer to a question was $y = 2x - 3$.
A student answered: $y = 2 - 3x$. He said that he mixed up the y-intercept and the slope.
This was (choose one):

- (a) No mistake
- (b) A minor mistake
- (c) A major mistake

Any comments? (optional) ...

74 Given a problem: Solve $|2x - 1| < 5$. Which solution do you like better?

Solution a

$$|2x - 1| < 5$$

$$2x - 1 = 5 \quad \text{neg. } 2x - 1 = -5$$

$$x = 3 \qquad \qquad \qquad x = -2$$

$$\text{Answer: } -2 < x < 3$$

Solution b

We use the theorem : $|a| < b \iff -b < a < b$

$$|2x - 1| < 5 \iff -5 < 2x - 1 < 5 \iff 2x - 1 > -5 \text{ and } 2x - 1 < 5 \iff x > -2 \text{ and } x < 3$$

$$\text{Answer: } -2 < x < 3$$

Why? (optional) ...

75 Given a problem: Solve $|2x-1| > 5$. Which solution do you like better?

Solution a

$$|2x - 1| > 5$$

$$2x - 1 = 5 \quad \text{neg. } 2x - 1 = -5$$

$$x = 3 \qquad \qquad \qquad x = -2$$

$$\text{Answer: } 3 > x > -2$$

Solution b

We use the theorem: $|a| > b \iff a < -b \text{ or } a > b$

$$|2x - 1| > 5 \iff 2x - 1 < -5 \text{ or } 2x - 1 > 5 \iff x < -2 \text{ or } x > 3$$

$$\text{Answer: } x < -2 \text{ or } x > 3$$

Why? (optional) - write below:

76 Complete the sentence:
Math is ...

If we have any questions regarding some of your answers, would you agree that we contact you again?

YES NO

If you agree that we contact you again then please write your name and telephone number (or e-mail) below:

YOUR NAME: _____

Telephone number _____

E-mail address: _____

Thank you so much for completing the questionnaire!

With kind regards and wishes

Anna Sierpiska