

## **STUDENT QUESTIONNAIRE FOR PISA 2012**

Main Survey

No notes version

December 2011

**Consortium:**

Australian Council for Educational Research (ACER, Australia)  
cApSAn Linguistic Quality Control (Belgium)  
Deutsches Institut für Internationale Pädagogische Forschung (DIPF, Germany)  
Educational Testing Service (ETS, USA)  
Institutt for Læring og Skoleutvikling (ILS, Norway)  
Leibniz - Institute for Science and Mathematics Education (IPN, Germany)  
National Institute for Educational Policy Research (NIER, Japan)  
The Tao Initiative: CRP - Henri Tudor and Université de Luxembourg - EMACS  
(Luxembourg)  
Unité d'analyse des systèmes et des pratiques d'enseignement (aSPe, Belgium)  
Westat (USA)

### Note 1

In this booklet you will find questions about:

- You (Section A)
- Your Family and Home (Section B)
- Learning Mathematics (Section C)
- Your Mathematics Experiences (Section D)
- Your School (Section E)
- Your Problem Solving Experiences (Section F)

Please read each question carefully and answer as accurately as you can. In the test you usually circle your answers. For this questionnaire, you will normally answer by ticking a box. For a few questions you will need to write a short answer.

If you make a mistake when ticking a box, cross out your error and check the correct box. If you make an error when writing an answer, simply cross it out and write the correct answer next to it.

**In this questionnaire, there are no 'right' or 'wrong' answers. Your answers should be the ones that are 'right' for you.**

You may ask for help if you do not understand something or are not sure how to answer a question.

**Your answers will be combined with others to make totals and averages in which no individual can be identified. All your answers will be kept confidential.**

## SECTION <A>: ABOUT YOU

### ST01Q01

ST01

**Q** What <grade> are you in?

\_\_\_\_\_ <grade>

### ST02Q01

ST02

**Q** Which one of the following <programmes> are you in?

(Please tick only one box.)

<Programme 1>  <sub>1</sub>

<Programme 2>  <sub>2</sub>

<Programme 3>  <sub>3</sub>

<Programme 4>  <sub>4</sub>

<Programme 5>  <sub>5</sub>

<Programme 6>  <sub>6</sub>

ST03Q01-ST03Q03

ST03

**Q On what date were you born?**

(Please write the day, month and year you were born.)

\_\_\_\_\_ 19\_\_\_\_  
Day Month Year

ST04Q01

ST04

**Q Are you female or male?**

Female \_1 Male \_2

ST05Q01

ST05

**Q Did you attend <ISCED 0>?**

No \_1  
Yes, for one year or less \_2  
Yes, for more than one year \_3

ST06Q01

ST06

**Q How old were you when you started <ISCED 1>?**

\_\_\_\_\_ Years

ST07Q01-ST07Q03

ST07

**Q Have you ever repeated a <grade>?**

(Please tick only one box in each row.)

|                 | No, never                   | Yes, once                   | Yes, twice or more          |
|-----------------|-----------------------------|-----------------------------|-----------------------------|
| a) At <ISCED 1> | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 |
| b) At <ISCED 2> | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 |
| c) At <ISCED 3> | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 |

ST08Q01

ST08

**Q** In the last two full weeks of school, how many times did you arrive late for school?

(Please tick only one box.)

- None \_1
- One or two times \_2
- Three or four times \_3
- Five or more times \_4

ST09Q01

ST09

**Q** In the last two full weeks of school, how many times did you <skip> a whole school day?

(Please tick only one box.)

- None \_1
- One or two times \_2
- Three or four times \_3
- Five or more times \_4

ST115Q01

ST115

**Q** In the last two full weeks of school, how many times did you <skip> some classes?

(Please tick only one box.)

- None \_1
- One or two times \_2
- Three or four times \_3
- Five or more times \_4

**SECTION <B>: ABOUT YOUR FAMILY AND HOME**

**Note 2**

In this section you will be asked some questions about your family and your home.

Some of the following questions are about your mother and father or those persons who are like a mother or father to you — for example, guardians, step-parents, foster parents, etc.

If you share your time with more than one set of parents or guardians, please answer the following questions for those parents/guardians you spend the most time with.

**ST11Q01-ST11Q06**

**Q Who usually lives at <home> with you?**

*(Please tick one box in each row.)*

|   | Yes                                   | No                                    |
|---|---------------------------------------|---------------------------------------|
| a) Mother (including stepmother or foster mother) | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| b) Father (including stepfather or foster father) | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| c) Brother(s) (including stepbrothers)            | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| d) Sister(s) (including stepsisters)              | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| e) Grandparent(s)                                 | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| f) Others (e.g. cousin)                           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |

**Q What is your mother's main job?  
(e.g. school teacher, kitchen-hand, sales manager)**

*(If she is not working now, please tell us her last main job.)*

*Please write in the job title.* \_\_\_\_\_

**Q What does your mother do in her main job?  
(e.g. teaches high school students, helps the cook prepare meals in a restaurant, manages a sales team)**

*Please use a sentence to describe the kind of work she does or did in that job.*

\_\_\_\_\_

**Q** What is the <highest level of schooling> completed by your mother?

If you are not sure which box to choose, please ask the <test administrator> for help.

(Please tick only one box.)

- <ISCED level 3A> \_1
- <ISCED level 3B, 3C> \_2
- <ISCED level 2> \_3
- <ISCED level 1> \_4
- She did not complete <ISCED level 1> \_5

**Q** Does your mother have any of the following qualifications?

If you are not sure how to answer this question, please ask the <test administrator> for help.

(Please tick one box in each row.)

- |                     | Yes                         | No                          |
|---------------------|-----------------------------|-----------------------------|
| a) <ISCED level 6>  | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| b) <ISCED level 5A> | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| c) <ISCED level 5B> | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| d) <ISCED level 4>  | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |

**Q** What is your mother currently doing?

*(Please tick only one box.)*

Working full-time <for pay>  <sub>1</sub>

Working part-time <for pay>  <sub>2</sub>

Not working, but looking for a job  <sub>3</sub>

Other (e.g. home duties, retired)  <sub>4</sub>

**Q** What is your father's main job?  
(e.g. school teacher, kitchen-hand, sales manager)

*(If he is not working now, please tell us his last main job.)*

*Please write in the job title.* \_\_\_\_\_

**Q** What does your father do in his main job?  
(e.g. teaches high school students, helps the cook prepare meals in a restaurant, manages a sales team)

*Please use a sentence to describe the kind of work he does or did in that job.*

\_\_\_\_\_

**Q** What is the <highest level of schooling> completed by your father?

*If you are not sure how to answer this question, please ask the <test administrator> for help.*

*(Please tick only one box.)*

- <ISCED level 3A>  <sub>1</sub>
- <ISCED level 3B, 3C>  <sub>2</sub>
- <ISCED level 2>  <sub>3</sub>
- <ISCED level 1>  <sub>4</sub>
- He did not complete <ISCED level 1>  <sub>5</sub>

**Q** Does your father have any of the following qualifications?

*If you are not sure which box to choose, please ask the <test administrator> for help.*

*(Please tick one box in each row.)*

- |                     | Yes                                   | No                                    |
|---------------------|---------------------------------------|---------------------------------------|
| a) <ISCED level 6>  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| b) <ISCED level 5A> | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| c) <ISCED level 5B> | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| d) <ISCED level 4>  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |



**ST19Q01**

ST19

**Q What is your father currently doing?**

*(Please tick only one box.)*

- Working full-time <for pay>  <sub>1</sub>
- Working part-time <for pay>  <sub>2</sub>
- Not working, but looking for a job  <sub>3</sub>
- Other (e.g. home duties, retired)  <sub>4</sub>

**ST20Q01-ST20Q03**

ST20

**Q In what country were you and your parents born?**

*(Please tick one box in each column.)*

|               | You  | Mother   | Father   |
|---------------|--|--|--|
| <Country A>   | <input type="checkbox"/> <sub>01</sub>         | <input type="checkbox"/> <sub>01</sub>         | <input type="checkbox"/> <sub>01</sub>         |
| <Country B>   | <input type="checkbox"/> <sub>02</sub>         | <input type="checkbox"/> <sub>02</sub>         | <input type="checkbox"/> <sub>02</sub>         |
| <Country C>   | <input type="checkbox"/> <sub>03</sub>         | <input type="checkbox"/> <sub>03</sub>         | <input type="checkbox"/> <sub>03</sub>         |
| <Country D>   | <input type="checkbox"/> <sub>04</sub>         | <input type="checkbox"/> <sub>04</sub>         | <input type="checkbox"/> <sub>04</sub>         |
| <...etc.>     | <input type="checkbox"/> <sub>&lt;XX&gt;</sub> | <input type="checkbox"/> <sub>&lt;XX&gt;</sub> | <input type="checkbox"/> <sub>&lt;XX&gt;</sub> |
| Other country | <input type="checkbox"/> <sub>&lt;XX&gt;</sub> | <input type="checkbox"/> <sub>&lt;XX&gt;</sub> | <input type="checkbox"/> <sub>&lt;XX&gt;</sub> |

**ST21Q01**

ST21

**Q If you were NOT born in <country of test>, how old were you when you arrived in <country of test>?**

*If you were less than 12 months old, please write zero (0).*

*If you were born in <country of test> please skip this question and go to Q<x>.*

\_\_\_\_\_ Years

**Q** What language do you speak at home most of the time?

(Please tick only one box.)

- <Language 1>  <XXX>
- <Language 2>  <XXX>
- <Language 3>  <XXX>
- <...etc.>  <XXX>
- Other language  <XXX>

**Q** Which of the following are in your home?

(Please tick one box in each row.)

- |  | Yes                                   | No                                    |
|--|---------------------------------------|---------------------------------------|
| a) A desk to study at                      | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| b) A room of your own                      | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| c) A quiet place to study                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| d) A computer you can use for school work  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| e) Educational software                    | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| f) A link to the Internet                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| g) Classic literature (e.g. <Shakespeare>) | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| h) Books of poetry                         | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| i) Works of art (e.g. paintings)           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| j) Books to help with your school work     | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| k) <Technical reference books>             | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| l) A dictionary                            | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| m) A dishwasher                            | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| n) A <DVD> player                          | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| o) <Country-specific wealth item 1>        | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| p) <Country-specific wealth item 2>        | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |
| q) <Country-specific wealth item 3>        | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> |

**Q** How many of these are there at your home?*(Please tick only one box in each row.)*

|                                | None                     | One                      | Two                      | Three or more            |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Cellular phones             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Televisions                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Computers                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Cars                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Rooms with a bath or shower | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Q** How many books are there in your home?*There are usually about 40 books per metre of shelving. Do not include magazines, newspapers, or your schoolbooks.**(Please tick only one box.)*

|                     |                          |
|---------------------|--------------------------|
| 0-10 books          | <input type="checkbox"/> |
| 11-25 books         | <input type="checkbox"/> |
| 26-100 books        | <input type="checkbox"/> |
| 101-200 books       | <input type="checkbox"/> |
| 201-500 books       | <input type="checkbox"/> |
| More than 500 books | <input type="checkbox"/> |

**SECTION <C>: ABOUT LEARNING MATHEMATICS**

ST29Q01-ST29Q08

ST29

**Q Thinking about your views on mathematics: to what extent do you agree with the following statements?**

(Please tick only one box in each row.)

- |  | Strongly agree             | Agree                      | Disagree                   | Strongly disagree          |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) I enjoy reading about mathematics.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) Making an effort in mathematics is worth it because it will help me in the work that I want to do later on. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) I look forward to my mathematics lessons.   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) I do mathematics because I enjoy it.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) Learning mathematics is worthwhile for me because it will improve my career <prospects, chances>.           | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| f) I am interested in the things I learn in mathematics.   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| g) Mathematics is an important subject for me because I need it for what I want to study later on.             | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| h) I will learn many things in mathematics that will help me get a job.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

ST35Q01-ST35Q06

ST35

**Q Thinking about how people important to you view mathematics: how strongly do you agree with the following statements?**

(Please tick only one box in each row.)

- |  | Strongly agree             | Agree                      | Disagree                   | Strongly disagree          |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) Most of my friends do well in mathematics.                      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) Most of my friends work hard at mathematics.                    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) My friends enjoy taking mathematics tests.                      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) My parents believe it's important for me to study mathematics.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) My parents believe that mathematics is important for my career. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| f) My parents like mathematics.                                    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q How confident do you feel about having to do the following mathematics tasks?**

(Please tick only one box in each row.)

|   | Very confident             | Confident                  | Not very confident         | Not at all confident       |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| a) Using a <train timetable> to work out how long it would take to get from one place to another. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) Calculating how much cheaper a TV would be after a 30% discount.                               | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) Calculating how many square metres of tiles you need to cover a floor.                         | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) Understanding graphs presented in newspapers.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) Solving an equation like $3x+5=17$ .   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| f) Finding the actual distance between two places on a map with a 1:10,000 scale.                 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| g) Solving an equation like $2(x+3) = (x+3)(x-3)$ .   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| h) Calculating the petrol consumption rate of a car.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q Thinking about studying mathematics: to what extent do you agree with the following statements?**

(Please tick only one box in each row.)

|   | Strongly agree             | Agree                      | Disagree                   | Strongly disagree          |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| a) I often worry that it will be difficult for me in mathematics classes. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) I am just not good at mathematics.                                     | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) I get very tense when I have to do mathematics homework.               | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) I get good <grades> in mathematics.                                    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) I get very nervous doing mathematics problems.                         | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| f) I learn mathematics quickly.   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| g) I have always believed that mathematics is one of my best subjects.    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| h) I feel helpless when doing a mathematics problem.                      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| i) In my mathematics class, I understand even the most difficult work.    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| j) I worry that I will get poor <grades> in mathematics.                  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q** Thinking about your mathematics lessons: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

|   | <i>Strongly agree</i>                 | <i>Agree</i>                          | <i>Disagree</i>                       | <i>Strongly disagree</i>              |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) If I put in enough effort I can succeed in mathematics.  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) Whether or not I do well in mathematics is completely up to me.                                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) Family demands or other problems prevent me from putting a lot of time into my mathematics work. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) If I had different teachers, I would try harder in mathematics.                                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| e) If I wanted to, I could do well in mathematics.  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| f) I do badly in mathematics whether or not I study for my exams.                                   | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**Q** Suppose that you are a student in the following situation:

*Each week, your mathematics teacher gives a short quiz. Recently you have done badly on these quizzes. Today you are trying to figure out why.*

**How likely are you to have these thoughts or feelings in this situation?**

(Please tick only one box in each row.)

|   | <i>Very likely</i>                    | <i>Likely</i>                         | <i>Slightly likely</i>                | <i>Not at all likely</i>              |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) I'm not very good at solving mathematics problems.           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) My teacher did not explain the concepts well this week.      | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) This week I made bad guesses on the quiz.                    | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) Sometimes the course material is too hard.                   | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| e) The teacher did not get students interested in the material. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| f) Sometimes I am just unlucky.                                 | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**Q** Thinking about the mathematics you do for school: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

|   | <i>Strongly agree</i>                 | <i>Agree</i>                          | <i>Disagree</i>                       | <i>Strongly disagree</i>              |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) I finish my homework in time for mathematics class.      | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) I work hard on my mathematics homework.                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) I am prepared for my mathematics exams.                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) I study hard for mathematics quizzes.                    | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| e) I keep studying until I understand mathematics material. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| f) I pay attention in mathematics class.                    | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| g) I listen in mathematics class.                           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| h) I avoid distractions when I am studying mathematics.     | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| i) I keep my mathematics work well organised.               | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**Q** For each pair of statements, please choose the item that best describes you.

a) Please tick only one of the following two boxes.

<sub>1</sub> I intend to take additional mathematics courses after school finishes.

<sub>2</sub> I intend to take additional <test language> courses after school finishes.

b) Please tick only one of the following two boxes.

<sub>1</sub> I plan on majoring in a subject in <college> that requires mathematics skills.

<sub>2</sub> I plan on majoring in a subject in <college> that requires science skills.

c) Please tick only one of the following two boxes.

<sub>1</sub> I am willing to study harder in my mathematics classes than is required.

<sub>2</sub> I am willing to study harder in my <test language> classes than is required.

d) Please tick only one of the following two boxes.

<sub>1</sub> I plan on <taking> as many mathematics classes as I can during my education.

<sub>2</sub> I plan on <taking> as many science classes as I can during my education.

e) Please tick only one of the following two boxes.

<sub>1</sub> I am planning on pursuing a career that involves a lot of mathematics

<sub>2</sub> I am planning on pursuing a career that involves a lot of science.

**Q** How often do you do the following things at school and outside of school?

(Please tick only one box in each row.)

|  | Always or<br>almost<br>always | Often                       | Sometimes                   | Never or<br>rarely          |
|--|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| a) I talk about mathematics problems with my friends.          | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| b) I help my friends with mathematics.                         | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| c) I do mathematics as an <extracurricular> activity.          | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| d) I take part in mathematics competitions.                    | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| e) I do mathematics more than 2 hours a day outside of school. | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| f) I play chess.   | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| g) I program computers.  | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| h) I participate in a mathematics club.                        | <input type="checkbox"/> _1   | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |

**Q** For each group of three items, please choose the item that best describes your approach to mathematics.

a) Please tick only one of the following three boxes.

- \_1 When I study for a mathematics test, I try to work out what the most important parts to learn are.
- \_2 When I study for a mathematics test, I try to understand new concepts by relating them to things I already know.
- \_3 When I study for a mathematics test, I learn as much as I can off by heart.

b) Please tick only one of the following three boxes.

- \_1 When I study mathematics, I try to figure out which concepts I still have not understood properly
- \_2 When I study mathematics, I think of new ways to get the answer.
- \_3 When I study mathematics, I make myself check to see if I remember the work I have already done

c) Please tick only one of the following three boxes.

- \_1 When I study mathematics, I try to relate the work to things I have learnt in other subjects.
- \_2 When I study mathematics, I start by working out exactly what I need to
- \_3 When I study mathematics, I go over some problems so often that I feel as if I could solve them in my sleep.

d) Please tick only one of the following three boxes.

- \_1 In order to remember the method for solving a mathematics problem, I go through examples again and again.
- \_2 I think about how the mathematics I have learnt can be used in everyday life.
- \_3 When I cannot understand something in mathematics, I always search for more information to clarify the problem.



**Q** How many hours do you typically spend per week attending <out-of-school-time lessons> in the following subjects?

*These are only lessons in subjects that you are also learning at school, which you spend learning extra time on outside of normal school hours. The lessons may be given at your school, at your home or somewhere else.*

*(Please tick only one box in each row.)*

|                    | <i>I do not attend &lt;out-of-school-time lessons&gt; in this subject</i> | <i>Less than 2 hours a week</i> | <i>2 or more but less than 4 hours a week</i> | <i>4 or more but less than 6 hours a week</i> | <i>6 or more hours a week</i> |
|--------------------|---|---------------------------------|---|---|-------------------------------|
| a) <Test language> | <input type="checkbox"/> 1  | <input type="checkbox"/> 2      | <input type="checkbox"/> 3                    | <input type="checkbox"/> 4                    | <input type="checkbox"/> 5    |
| b) Mathematics     | <input type="checkbox"/> 1  | <input type="checkbox"/> 2      | <input type="checkbox"/> 3                    | <input type="checkbox"/> 4                    | <input type="checkbox"/> 5    |
| c) <Science>       | <input type="checkbox"/> 1  | <input type="checkbox"/> 2      | <input type="checkbox"/> 3                    | <input type="checkbox"/> 4                    | <input type="checkbox"/> 5    |
| d) Other Subjects  | <input type="checkbox"/> 1  | <input type="checkbox"/> 2      | <input type="checkbox"/> 3                    | <input type="checkbox"/> 4                    | <input type="checkbox"/> 5    |

**Q** Thinking about all school subjects: on average, how many hours do you spend each week on the following?

*When answering, include time spent on the weekend too.*

- a) Homework or other study set by your teachers \_\_\_\_\_ hours per week
- b) Out of the time spent in (a), how many hours do you work on your homework with somebody overlooking and providing help if necessary (“guided homework”), either at school or elsewhere? \_\_\_\_\_ hours per week
- c) Work with a personal <tutor> (whether paid or not) \_\_\_\_\_ hours per week
- d) Attend out of school classes organised by a commercial company, and paid for by your parents \_\_\_\_\_ hours per week
- e) Study with a parent or other family member \_\_\_\_\_ hours per week
- f) Repeat and train content from school lessons by working on a computer (e.g. learn vocabulary with training software) \_\_\_\_\_ hours per week

**Q How often have you encountered the following types of mathematics tasks during your time at school?**

(Please tick only one box on each row.)

|  | Frequently               | Sometimes                | Rarely                   | Never                    |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a) Working out from a <train timetable> how long it would take to get from one place to another. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Calculating how much more expensive a computer would be after adding tax.                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) Calculating how many square metres of tiles you need to cover a floor.                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d) Understanding scientific tables presented in an article.                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e) Solving an equation like $6x^2 + 5 = 29$  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Finding the actual distance between two places on a map with a 1:10,000 scale.                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g) Solving an equation like $2(x+3) = (x+3)(x-3)$  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h) Calculating the power consumption of an electronic appliance per week.                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i) Solving an equation like $3x+5=17$ .  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Q Thinking about mathematical concepts: how familiar are you with the following terms?**

(Please tick only one box in each row.)

|                           | Never heard of it        | Heard of it once or twice | Heard of it a few times  | Heard of it often        | Know it well, understand the concept |
|---------------------------|--------------------------|---------------------------|--------------------------|--------------------------|--------------------------------------|
| a) Exponential Function   | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| b) Divisor                | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| c) Quadratic Function     | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| d) <Proper Number>        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| e) Linear Equation        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| f) Vectors                | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| g) Complex Number         | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| h) Rational Number        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| i) Radicals               | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| j) <Subjunctive Scaling>  | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| k) Polygon                | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| l) <Declarative Fraction> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| m) Congruent Figure       | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| n) Cosine                 | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| o) Arithmetic Mean        | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |
| p) Probability            | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>             |

**ST69Q01-ST69Q03**

ST69

**Q** How many minutes, on average, are there in a <class period> for the following subjects?

- a) Minutes in a <class period> in <test language>: \_\_\_\_\_ *Minutes*
- b) Minutes in a <class period> in mathematics: \_\_\_\_\_ *Minutes*
- c) Minutes in a <class period> in <science>: \_\_\_\_\_ *Minutes*

**ST70Q01-ST70Q03**

ST70

**Q** How many <class periods> per week do you typically have for the following subjects?

- a) Number of <class periods> per week in <test language>: \_\_\_\_\_ *<class periods>*
- b) Number of <class periods> per week in mathematics: \_\_\_\_\_ *<class periods>*
- c) Number of <class periods> per week in <science>: \_\_\_\_\_ *<class periods>*

**ST71Q01**

ST71

**Q** In a normal, full week at school, how many <class periods> do you have <in total>?

Number of ALL <class periods> \_\_\_\_\_ *<class periods>*

**ST72Q01**

ST72

**Q** On average, about how many students attend your <test language> class?

\_\_\_\_\_ *students*

**Note 3**

The next four questions are about your experience with different kinds of mathematics problems at school. You will see descriptions of problems and grey-coloured boxes, each containing a mathematics problem.

**Please read each problem. You do NOT need to solve it.**

**ST73Q01-ST73Q02**

ST73

**Q** *In the box is a series of problems. Each requires you to understand a problem written in text and perform the appropriate calculations. Usually the problem talks about practical situations, but the numbers and people and places mentioned are made up. All the information you need is given. Here are two examples:*

1) <Ann> is two years older than <Betty> and <Betty> is four times as old as <Sam>. When <Betty> is 30, how old is <Sam>?

2) Mr <Smith> bought a television and a bed. The television cost <\$625> but he got a 10% discount. The bed cost <\$200>. He paid <\$20> for delivery. How much money did Mr <Smith> spend?

**We want to know about your experience with these types of word problems at school. Do not solve them!**

*(Please tick only one box in each row.)*

- |  | Frequently                            | Sometimes                             | Rarely                                | Never                                 |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) How often have you encountered these types of problems in your <b>mathematics lessons</b> ?           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) How often have you encountered these types of problems in the <b>tests you have taken at school</b> ? | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**ST74Q01-ST74Q02**

ST74

**Q** *Below are examples of another set of mathematical skills.*

1) Solve  $2x + 3 = 7$ .  
 2) Find the volume of a box with sides 3m, 4m and 5m.

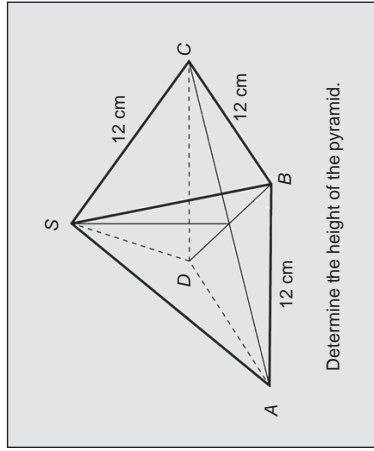
**We want to know about your experience with these types of problems at school. Do not solve them!**

*(Please tick only one box in each row.)*

- |  | Frequently                            | Sometimes                             | Rarely                                | Never                                 |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) How often have you encountered these types of problems in your <b>mathematics lessons</b> ?           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) How often have you encountered these types of problems in the <b>tests you have taken at school</b> ? | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**Q** In the next type of problem, you have to use mathematical knowledge and draw conclusions. There is no practical application provided. Here are two examples.

1) Here you need to use geometrical theorems:



2) Here you have to know what a prime number is:

If  $n$  is any number, can  $(n+1)^2$  be a prime number?

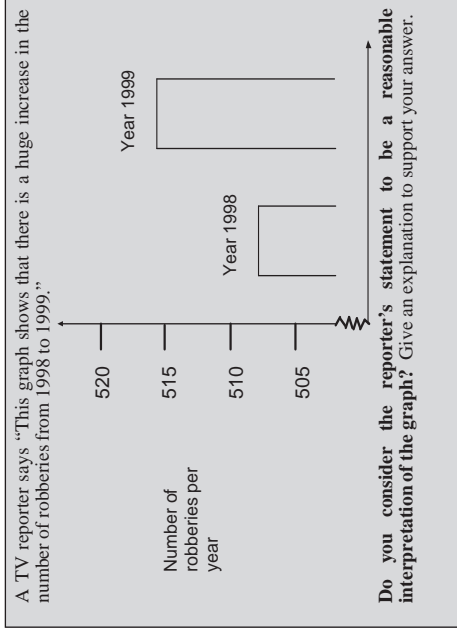
**We want to know about your experience with these types of problems at school. Do not solve them!**

(Please tick only one box in each row.)

- |  | Frequently                            | Sometimes                             | Rarely                                | Never                                 |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) How often have you encountered these types of problems in your <b>mathematics lessons</b> ?           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) How often have you encountered these types of problems in the <b>tests you have taken at school</b> ? | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**Q** In this type of problem, you have to apply suitable mathematical knowledge to find a useful answer to a problem that arises in everyday life or work. The data and information are about real situations. Here are two examples.

Example 1:



Example 2:

For years the relationship between a person's recommended maximum heart rate and the person's age was described by the following formula:  
*Recommended maximum heart rate* =  $220 - \text{age}$

Recent research showed that this formula should be modified slightly. The new formula is as follows:  
*Recommended maximum heart rate* =  $208 - (0.7 \times \text{age})$

From which age onwards does the recommended maximum heart rate increase as a result of the introduction of the new formula? Show your work.

**We want to know about your experience with these types of problems at school. Do not solve them!**

*(Please check only one box in each row.)*

|   | <i>Frequently</i>           | <i>Sometimes</i>            | <i>Rarely</i>               | <i>Never</i>                |
|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| a) How often have you encountered these types of problems in your <b>mathematics lessons?</b>           | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |
| b) How often have you encountered these types of problems in the <b>tests you have taken at school?</b> | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _4 |

<This page is intentionally blank.>

**SECTION <D>: ABOUT YOUR MATHEMATICS EXPERIENCES**

ST77Q01-ST77Q06

ST77

**Q How often do these things happen in your mathematics lessons?**

*(Please tick only one box in each row.)*

- |   | Every lesson               | Most lessons               | Some lessons               | Never or hardly ever       |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| a) The teacher shows an interest in every student's learning.     | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) The teacher gives extra help when students need it.            | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) The teacher helps students with their learning.                | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) The teacher continues teaching until the students understand.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) The teacher gives students an opportunity to express opinions. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

ST79Q01-ST79Q17

ST79

**Q How often do these things happen in your mathematics lessons?**

*(Please tick only one box in each row.)*

- |  | Every Lesson               | Most Lessons               | Some Lessons               | Never or Hardly Ever       |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) The teacher sets clear goals for our learning.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) The teacher asks me or my classmates to present our thinking or reasoning at some length.                             | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) The teacher gives different work to classmates who have difficulties learning and/or to those who can advance faster. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) The teacher assigns projects that require at least one week to complete.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) The teacher tells me about how well I am doing in my mathematics class.   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| f) The teacher asks questions to check whether we have understood what was taught.                                       | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| g) The teacher has us work in small groups to come up with joint solutions to a problem or task.                         | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| h) At the beginning of a lesson, the teacher presents a short summary of the previous lesson.                            | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

Every Lesson      Most Lessons      Some Lessons      Never or Hardly Ever

- i) The teacher asks us to help plan classroom activities or topics. \_1      \_2      \_3      \_4
- j) The teacher gives me feedback on my strengths and weaknesses in mathematics. \_1      \_2      \_3      \_4
- k) The teacher tells us what is expected of us when we get a test, quiz or assignment. \_1      \_2      \_3      \_4
- l) The teacher tells us what we have to learn. \_1      \_2      \_3      \_4
- m) The teacher tells me what I need to do to become better in mathematics. \_1      \_2      \_3      \_4

**Q Thinking about the mathematics teacher that taught your last mathematics class: How often does each of the following happen?**

(Please tick only one box in each row.)

Always or almost always      Often      Sometimes      Never or rarely

- a) The teacher asks questions that make us reflect on the problem. \_1      \_2      \_3      \_4
- b) The teacher gives problems that require us to think for an extended time. \_1      \_2      \_3      \_4
- c) The teacher asks us to decide on our own procedures for solving complex problems. \_1      \_2      \_3      \_4
- d) The teacher presents problems for which there is no immediately obvious method of solution. \_1      \_2      \_3      \_4
- e) The teacher presents problems in different contexts so that students know whether they have understood the concepts. \_1      \_2      \_3      \_4
- f) The teacher helps us to learn from mistakes we have made. \_1      \_2      \_3      \_4
- g) The teacher asks us to explain how we have solved a problem. \_1      \_2      \_3      \_4
- h) The teacher presents problems that require students to apply what they have learned to new contexts. \_1      \_2      \_3      \_4
- i) The teacher gives problems that can be solved in several different ways. \_1      \_2      \_3      \_4



**Q** How often do these things happen in your mathematics lessons?

(Please tick only one box in each row.)

|  | Every lesson               | Most lessons               | Some lessons               | Never or hardly ever       |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) Students don't listen to what the teacher says.                       | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) There is noise and disorder.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) The teacher has to wait a long time for students to <quiet down>.     | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) Students cannot work well.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) Students don't start working for a long time after the lesson begins. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q** Below you will find descriptions of three mathematics teachers. Read each of the descriptions of these teachers, then let us know to what extent you agree with the final statement.

(Please tick only one box in each row.)

|  | Strongly agree             | Agree                      | Disagree                   | Strongly disagree          |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) Ms. <name> sets mathematics homework every other day. She always gets the answers back to students before examinations. Ms. <name> is concerned about her students' learning. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) Mr. <name> sets mathematics homework once a week. He always gets the answers back to students before examinations. Mr. <name> is concerned about his students' learning.      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) Ms. <name> sets mathematics homework once a week. She never gets the answers back to students before examinations. Ms. <name> is concerned about her students' learning.      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q** Thinking about the mathematics teacher who taught your last mathematics class: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

- |   | <i>Strongly agree</i>      | <i>Agree</i>               | <i>Disagree</i>            | <i>Strongly disagree</i>   |
|---|----------------------------|----------------------------|----------------------------|----------------------------|
| a) My teacher lets us know we need to work hard.                  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) My teacher provides extra help when needed.                    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) My teacher helps students with their learning.                 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) My teacher gives students the opportunity to express opinions. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q** Below you will find descriptions of three mathematics teachers. Read each of the descriptions of these teachers, then let us know to what extent you agree with the final statement.

(Please tick only one box in each row.)

- |  | <i>Strongly agree</i>      | <i>Agree</i>               | <i>Disagree</i>            | <i>Strongly disagree</i>   |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) The students' in Ms. <name's> class frequently interrupt her lessons. She always arrives five minutes early to class. <b>Ms. &lt;name&gt; is in control of her classroom.</b>           | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) The students' in Ms. <name's> class are calm and orderly. She always arrives on time to class. <b>Ms. &lt;name&gt; is in control of her classroom.</b>                                  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) The students' in Mr. <name's> class frequently interrupt his lessons. As a result, he often arrives five minutes late to class. <b>Mr. &lt;name&gt; is in control of his classroom.</b> | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q** Thinking about the mathematics teacher who taught your last mathematics class: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

- |  | <i>Strongly agree</i>      | <i>Agree</i>               | <i>Disagree</i>            | <i>Strongly disagree</i>   |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) My teacher gets students to listen to him or her.                 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) My teacher keeps the class orderly.                               | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) My teacher starts lessons on time.                                | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) The teacher has to wait a long time for students to <quiet down>. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q** Thinking about the teachers at your school: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

- |  | <i>Strongly agree</i>      | <i>Agree</i>               | <i>Disagree</i>            | <i>Strongly disagree</i>   |
|--|----------------------------|----------------------------|----------------------------|----------------------------|
| a) Students get along well with most teachers.               | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| b) Most teachers are interested in students' well-being.     | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| c) Most of my teachers really listen to what I have to say.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| d) If I need extra help, I will receive it from my teachers. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |
| e) Most of my teachers treat me fairly.                      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 |

**Q** Thinking about your school: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

|   | <i>Strongly agree</i>                 | <i>Agree</i>                          | <i>Disagree</i>                       | <i>Strongly disagree</i>              |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) I feel like an outsider (or left out of things) at school. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) I make friends easily at school.                           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) I feel like I belong at school.                            | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) I feel awkward and out of place in my school.              | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| e) Other students seem to like me.                            | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| f) I feel lonely at school.                                   | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| g) I feel happy at school.                                    | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| h) Things are ideal in my school.                             | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| i) I am satisfied with my school.                             | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**Q** Thinking about what you have learned at school: to what extent do you agree with the following statements?

(Please tick only one box in each row.)

|   | <i>Strongly agree</i>                 | <i>Agree</i>                          | <i>Disagree</i>                       | <i>Strongly disagree</i>              |
|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) School has done little to prepare me for adult life when I leave school. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) School has been a waste of time.   | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) School has helped give me confidence to make decisions.                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) School has taught me things which could be useful in a job.              | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

ST89Q02-ST89Q05

ST89

**Q Thinking about your school: to what extent do you agree with the following statements?**

*(Please tick only one box in each row.)*

- |  | <i>Strongly agree</i>                 | <i>Agree</i>                          | <i>Disagree</i>                       | <i>Strongly disagree</i>              |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) Trying hard at school will help me get a good job.            | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) Trying hard at school will help me get into a good <college>. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) I enjoy receiving good <grades>.                              | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) Trying hard at school is important.                           | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

ST91Q01-ST91Q06

ST91

**Q Thinking about your school: to what extent do you agree with the following statements?**

*(Please tick only one box in each row.)*

- |  | <i>Strongly agree</i>                 | <i>Agree</i>                          | <i>Disagree</i>                       | <i>Strongly disagree</i>              |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) If I put in enough effort, I can succeed in school.   | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) It is completely my choice whether or not I do well at school.                              | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) Family demands or other problems prevent me from putting a lot of time into my school work. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) If I had different teachers, I would try harder at school.                                  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| e) If I wanted to, I could perform well at school.   | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| f) I perform poorly at school whether or not I study for my exams.                             | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**SECTION <F>: ABOUT YOUR PROBLEM SOLVING EXPERIENCES**

ST94Q04-ST94Q14

ST94

ST93Q01-ST93Q07

ST93

**Q** How well does each of the following statements below describe you?

(Please tick only one box in each row.)

- |   | Very much like me          | Mostly like me             | Somewhat like me           | Not much like me           | Not at all like me         |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| a) When confronted with a problem, I give up easily.                      | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| b) I put off difficult problems.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| c) I remain interested in the tasks that I start.                         | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| d) I continue working on tasks until everything is perfect.               | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| e) When confronted with a problem, I do more than what is expected of me. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

**Q** How well does each of the following statements below describe you?

(Please tick only one box in each row.)

- |                                       | Very much like me          | Mostly like me             | Somewhat like me           | Not much like me           | Not at all like me         |
|---------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| a) I can handle a lot of information. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| b) I am quick to understand things.   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| c) I seek explanations for things.    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| d) I can easily link facts together.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| e) I like to solve complex problems.  | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |

- Q** Suppose that you have been sending text messages from your mobile phone for several weeks. Today, however, you can't send text messages. You want to try to solve the problem.

**What would you do? For each suggestion, tick the option that best applies to you.**

(Please tick only one box in each row.)

- |  | <i>I would definitely do this</i>     | <i>I would probably do this</i>       | <i>I would probably not do this</i>   | <i>I would definitely not do this</i> |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) I press every button possible to find out what is wrong.                        | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) I think about what might have caused the problem and what I can do to solve it. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) I read the manual.  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) I ask a friend for help.  | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

- Q** Suppose that you are planning a trip to the zoo with your brother. You don't know which route to take to get there.

**What would you do? For each suggestion, tick the option that best applies to you.**

(Please tick only one box in each row.)

- |  | <i>I would definitely do this</i>     | <i>I would probably do this</i>       | <i>I would probably not do this</i>   | <i>I would definitely not do this</i> |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| a) I read the zoo brochure to see if it says how to get there.     | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| b) I study a map and work out the best route.                      | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| c) I leave it to my brother to worry about how to get there.       | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |
| d) I know roughly where it is, so I suggest we just start driving. | <input type="checkbox"/> <sub>1</sub> | <input type="checkbox"/> <sub>2</sub> | <input type="checkbox"/> <sub>3</sub> | <input type="checkbox"/> <sub>4</sub> |

**Q** Suppose that you arrive at the train station. There is a ticket machine that you have never used before. You want to buy a ticket.

**What would you do? For each suggestion, tick the option that best applies to you.**

(Please tick only one box in each row.)

- |  | <i>I would<br/>definitely<br/>do this</i> | <i>I would<br/>probably<br/>do this</i> | <i>I would<br/>probably<br/>not do this</i> | <i>I would<br/>definitely<br/>not do this</i> |
|--|---|---|---|---|
| a) I check how similar it is to other ticket machines I have used. | <input type="checkbox"/> <sub>1</sub>     | <input type="checkbox"/> <sub>2</sub>   | <input type="checkbox"/> <sub>3</sub>       | <input type="checkbox"/> <sub>4</sub>         |
| b) I try out all the buttons to see what happens.                  | <input type="checkbox"/> <sub>1</sub>     | <input type="checkbox"/> <sub>2</sub>   | <input type="checkbox"/> <sub>3</sub>       | <input type="checkbox"/> <sub>4</sub>         |
| c) I ask someone for help.   | <input type="checkbox"/> <sub>1</sub>     | <input type="checkbox"/> <sub>2</sub>   | <input type="checkbox"/> <sub>3</sub>       | <input type="checkbox"/> <sub>4</sub>         |
| d) I try to find a ticket office at the station to buy a ticket.   | <input type="checkbox"/> <sub>1</sub>     | <input type="checkbox"/> <sub>2</sub>   | <input type="checkbox"/> <sub>3</sub>       | <input type="checkbox"/> <sub>4</sub>         |

***Thank you very much for your co-operation in completing this questionnaire!***