

OECD Programme for International Student Assessment 2012



ORGANISATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

<country>

Date of Test (Main Survey PISA 2012)		
_____	_____	2012
Day	Month	

Student Questionnaire - Form C

School Name

Student ID

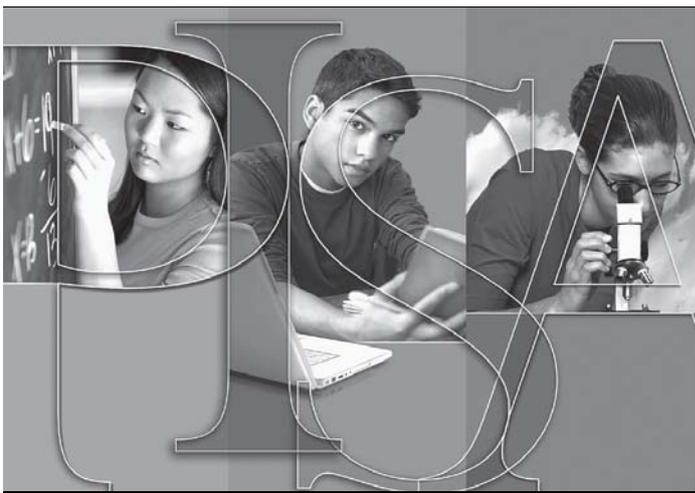
Student Name _____
Family name Given name

Date of Birth / / 19
Day Month Year

<Language of test> <ISO code>

Project Consortium

- Australian Council for Educational Research (ACER)
- cApStAn Linguistic Quality Control (Belgium)
- Deutsches Institut für Internationale Pädagogische Forschung (DIPF, Germany)
- Educational Testing Service (ETS, USA)
- Institutt for Lærerutdanning 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)



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)

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

ST01

Q1 What <grade> are you in?

<grade>

ST02

Q2 Which one of the following <programmes> are you in?

(Please tick only one box.)

<Programme 1> ₁

<Programme 2> ₂

<Programme 3> ₃

<Programme 4> ₄

<Programme 5> ₅

<Programme 6> ₆

Q3 On what date were you born?

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

_____ 19____
Day Month Year

Q4 Are you female or male?

Female Male

₁ ₂

Q5 Did you attend <ISCED 0>?

No ₁

Yes, for one year or less ₂

Yes, for more than one year ₃

Q6 How old were you when you started <ISCED 1>?

_____ *Years*

Q7 Have you ever repeated a <grade>?

(Please tick only one box in each row.)

	<i>No, never</i>	<i>Yes, once</i>	<i>Yes, twice or</i>
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

Q8 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

Q9 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

Q10 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 : ABOUT YOUR FAMILY AND HOME

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.

ST11

Q11 Who usually lives at <home> with you?

(Please tick one box in each row.)

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

**Q12 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. _____

**Q13 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.

Q14 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

Q15 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.)

	<i>Yes</i>	<i>No</i>
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

Q16 What is your mother currently doing?

(Please tick only one box.)

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

**Q17 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. _____

**Q18 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.

Q19 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> ₁

<ISCED level 3B, 3C> ₂

<ISCED level 2> ₃

<ISCED level 1> ₄

He did not complete <ISCED level 1> ₅

Q20 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.)

	<i>Yes</i>	<i>No</i>
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

Q21 What is your father currently doing?

(Please tick only one box.)

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

Q22 In what country were you and your parents born?*(Please tick one box in each column.)*

	<i>You</i>	<i>Mother</i>	<i>Father</i>
<Country A>	<input type="checkbox"/> ₀₁	<input type="checkbox"/> ₀₁	<input type="checkbox"/> ₀₁
<Country B>	<input type="checkbox"/> ₀₂	<input type="checkbox"/> ₀₂	<input type="checkbox"/> ₀₂
<Country C>	<input type="checkbox"/> ₀₃	<input type="checkbox"/> ₀₃	<input type="checkbox"/> ₀₃
<Country D>	<input type="checkbox"/> ₀₄	<input type="checkbox"/> ₀₄	<input type="checkbox"/> ₀₄
<...etc.>	<input type="checkbox"/> _{<xx>}	<input type="checkbox"/> _{<xx>}	<input type="checkbox"/> _{<xx>}
Other country	<input type="checkbox"/> _{<xx>}	<input type="checkbox"/> _{<xx>}	<input type="checkbox"/> _{<xx>}

Q23 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*

Q24 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>

Q25 Which of the following are in your home?*(Please tick one box in each row.)*

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

Q26 **How many of these are there at your home?***(Please tick only one box in each row.)*

	<i>None</i>	<i>One</i>	<i>Two</i>	<i>Three or more</i>
a) Cellular phones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ₄
b) Televisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ₄
c) Computers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ₄
d) Cars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ₄
e) Rooms with a bath or shower	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ₄

Q27 **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"/> ₁
11-25 books	<input type="checkbox"/> ₂
26-100 books	<input type="checkbox"/> ₃
101-200 books	<input type="checkbox"/> ₄
201-500 books	<input type="checkbox"/> ₅
More than 500 books	<input type="checkbox"/> ₆

SECTION <C>: ABOUT LEARNING MATHEMATICS

ST53

Q28 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.

Q29 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 <out-of-school-time lessons> 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

Q30 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*

Q31 How often have you encountered the following types of mathematics tasks during your time at school?

(Please tick only one box on each row.)

	<i>Frequently</i>	<i>Sometimes</i>	<i>Rarely</i>	<i>Never</i>
a) Working out from a <train timetable> 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 more expensive a computer would be after adding tax.	<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 scientific tables presented in an article.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) Solving an equation like $6x^2 + 5 = 29$	<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 power consumption of an electronic appliance per week.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
i) Solving an equation like $3x+5=17$.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q32 Thinking about mathematical concepts: how familiar are you with the following terms?

(Please tick only one box in each row.)

	<i>Never heard of it</i>	<i>Heard of it once or twice</i>	<i>Heard of it a few times</i>	<i>Heard of it often</i>	<i>Know it well, understand the concept</i>
a) Exponential Function	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
b) Divisor	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
c) Quadratic Function	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
d) <Proper Number>	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
e) Linear Equation	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
f) Vectors	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
g) Complex Number	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
h) Rational Number	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
i) Radicals	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
j) <Subjunctive Scaling>	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
k) Polygon	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
l) <Declarative Fraction>	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
m) Congruent Figure	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
n) Cosine	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
o) Arithmetic Mean	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅
p) Probability	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄	<input type="checkbox"/> ₅

Q33 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*

Q34 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>*

Q35 In a normal, full week at school, how many <class periods> do you have <in total>?

Number of **ALL** <class periods> _____ *<class periods>*

Q36 On average, about how many students attend your <test language> class?

_____ *students*

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.

ST73

Q37 *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.)

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

Q38 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!

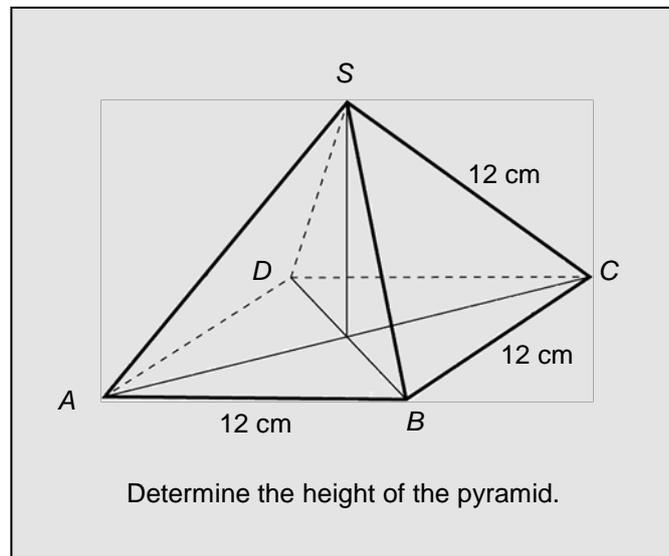
(Please tick only one box in each row.)

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

Q39

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!

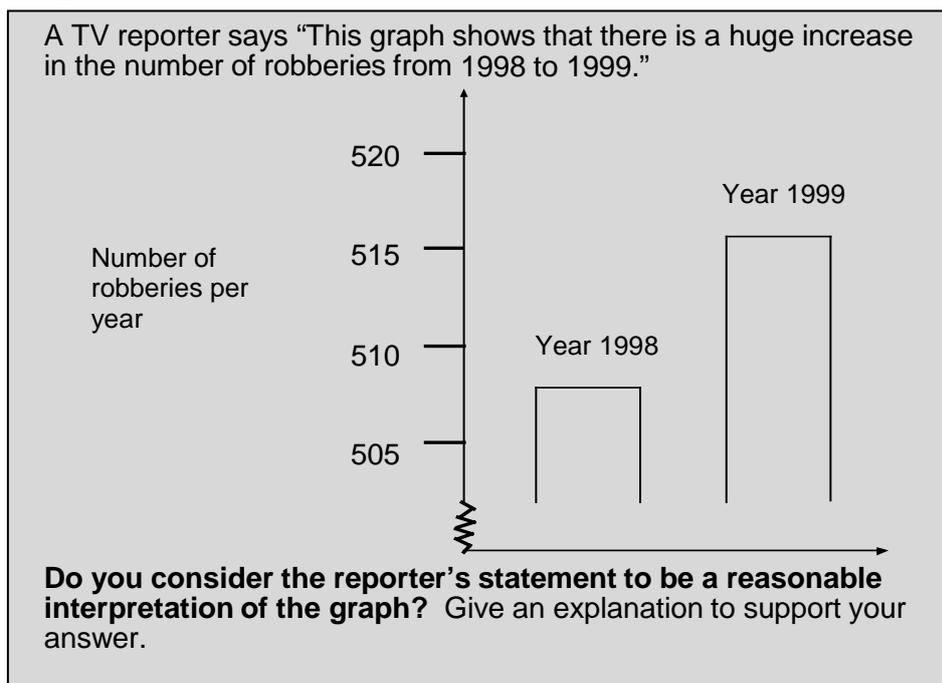
(Please tick only one box in each row.)

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

Q40

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:

$$\text{Recommended maximum heart rate} = 220 - \text{age}$$

Recent research showed that this formula should be modified slightly. The new formula is as follows:

$$\text{Recommended maximum heart rate} = 208 - (0.7 \times \text{age})$$

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 mathematics lessons ?	<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 tests you have taken at school ?	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q41 Thinking about studying mathematics: 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 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

SECTION D: ABOUT YOUR MATHEMATICS EXPERIENCES

ST77

Q42 How often do these things happen in your mathematics lessons?

(Please tick only one box in each row.)

	<i>Every lesson</i>	<i>Most lessons</i>	<i>Some lessons</i>	<i>Never or hardly ever</i>
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

Q43 **How often do these things happen in your mathematics lessons?**

(Please tick only one box in each row.)

	<i>Every Lesson</i>	<i>Most Lessons</i>	<i>Some Lessons</i>	<i>Never or Hardly Ever</i>
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

	<i>Every Lesson</i>	<i>Most Lessons</i>	<i>Some Lessons</i>	<i>Never or Hardly Ever</i>
i) The teacher asks us to help plan classroom activities or topics.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
j) The teacher gives me feedback on my strengths and weaknesses in mathematics.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
k) The teacher tells us what is expected of us when we get a test, quiz or assignment.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
l) The teacher tells us what we have to learn.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
m) The teacher tells me what I need to do to become better in mathematics.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q44 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.)

	<i>Always or almost always</i>	<i>Often</i>	<i>Sometimes</i>	<i>Never or rarely</i>
a) The teacher asks questions that make us reflect on the problem.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) The teacher gives problems that require us to think for an extended time.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) The teacher asks us to decide on our own procedures for solving complex problems.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) The teacher presents problems for which there is no immediately obvious method of solution.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) The teacher presents problems in different contexts so that students know whether they have understood the concepts.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f) The teacher helps us to learn from mistakes we have made.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
g) The teacher asks us to explain how we have solved a problem.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
h) The teacher presents problems that require students to apply what they have learned to new contexts.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
i) The teacher gives problems that can be solved in several different ways.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q45 How often do these things happen in your mathematics lessons?

(Please tick only one box in each row.)

	<i>Every lesson</i>	<i>Most lessons</i>	<i>Some lessons</i>	<i>Never or hardly ever</i>
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

Q46 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) 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 |

Q47 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

Q48 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. Ms. <name> is in control of her classroom.	<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. Ms. <name> is in control of her classroom.	<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. Mr. <name> is in control of his classroom.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q49 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

SECTION E: ABOUT YOUR SCHOOL

ST86

Q50 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

Q51 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"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) I make friends easily at school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) I feel like I belong at school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) I feel awkward and out of place in my school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) Other students seem to like me.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f) I feel lonely at school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
g) I feel happy at school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
h) Things are ideal in my school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
i) I am satisfied with my school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q52 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"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) School has been a waste of time.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) School has helped give me confidence to make decisions.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) School has taught me things which could be useful in a job.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q53 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"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) Trying hard at school will help me get into a good <college>.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) I enjoy receiving good <grades>.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) Trying hard at school is important.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Q54 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"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) It is completely my choice whether or not I do well at school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) Family demands or other problems prevent me from putting a lot of time into my school work.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) If I had different teachers, I would try harder at school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) If I wanted to, I could perform well at school.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f) I perform poorly at school whether or not I study for my exams.	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

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