

Teaching and Learning Practices in Secondary Mathematics  
Third Student Questionnaire (Autumn 2012)

Dear pupil,

You are being invited once again to take part in a research study run by the University of Manchester. The questionnaire you are about to complete is about your mathematics lessons in your school.

No-one else will see your answers to this questionnaire as it is **strictly confidential**. We are only asking you to enter your unique username, which will be given by your teacher, because we hope to group your responses with those of your classmates.

Please answer ALL questions as honestly as possible.

By completing and returning this questionnaire we take it that you are happy to take part in this research. As a small reward for your effort we will enter your username in a raffle to **win an ipod** at the end of the project!



### Part A – About yourself and your school

Please complete the following questions about your school and yourself, by filling in the boxes. Your **username**, and **maths class name** should have been provided to you by your teacher.

- My username is: 

Username	
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- The name of my school is: 

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- The name of my maths class/set is: 

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- The name of my maths teacher is: 

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- I have a second maths teacher, who is: 

--

  
(If you only have one maths teacher, leave this box empty)
- My year group is (please circle one):    **Year 7**    Year 8    Year 9    Year 10    Year 11
- I am a:    

Boy	
-----	--

Girl	
------	--
- Which is your favourite subject in school? 

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- Which is your least favourite subject in school? 

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10. How do you rate your ability in the following subjects?

(Please circle what you think is appropriate in each line)

<b>Mathematics</b>	Poor	Average	Good	Excellent
<b>English</b>	Poor	Average	Good	Excellent
<b>Science</b>	Poor	Average	Good	Excellent

11. How has your ability in these subjects changed since last year?

(Please circle what you think is appropriate in each line)

<b>Mathematics</b>	I am worse now	I am the same	I am better now
<b>English</b>	I am worse now	I am the same	I am better now
<b>Science</b>	I am worse now	I am the same	I am better now

12. How often do your parents/carers do the following?

(Please circle the most appropriate number in each line)

	<b>Never</b>	<b>Rarely</b>	<b>Sometimes</b>	<b>Often</b>	<b>All the time</b>
Check whether you have done your homework	1	2	3	4	5
Help you with your homework	1	2	3	4	5
Praise or reward you for good grades	1	2	3	4	5
Reduce your rewards because of low grades	1	2	3	4	5
Find you a tutor to help you with your homework	1	2	3	4	5

**Please answer the following questions thinking about primary and secondary school:**

**A.** What has been the biggest change for you, moving from primary to secondary school?

**B.** Has the way you been taught by teachers changed? If so, how?

**C.** How is mathematics different from primary school?

## Part B – Your feelings about Mathematics

We would, now, like you to tell us how you feel about mathematics.  
How much do you agree or disagree with the following statements?

(Please circle the appropriate number in each line)		Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1	Mathematics is important to me.	1	2	3	4	5
2	Most people can learn to be good at maths.	1	2	3	4	5
3	My parents/carers like maths.	1	2	3	4	5
4	Maths is one of the most interesting school subjects.	1	2	3	4	5
5	Learning maths is enjoyable for me.	1	2	3	4	5
6	I have a mathematical mind.	1	2	3	4	5
7	I can get good results in maths.	1	2	3	4	5
8	I am interested in learning new things in maths.	1	2	3	4	5
9	In maths you get rewards for your effort.	1	2	3	4	5
10	Being good at maths is something you are born with.	1	2	3	4	5
11	I can learn maths even if it is hard.	1	2	3	4	5
12	I like using maths I am familiar with rather than new maths topics.	1	2	3	4	5
13	I am more worried about maths than any other subject.	1	2	3	4	5
14	I often need help with maths.	1	2	3	4	5
15	Compared to my classmates, I am good at maths.	1	2	3	4	5
16	My parents/carers enjoy solving mathematical problems.	1	2	3	4	5
17	I never want to take another mathematics course.	1	2	3	4	5
18	I would prefer my future studies to include a lot of maths.	1	2	3	4	5
19	I would look forward to studying more mathematics after school.	1	2	3	4	5
20	I would like to be a mathematician.	1	2	3	4	5
21	Maths is important for my future (after school)	1	2	3	4	5

## Part C – About what you would like to do after you finish school

In this section we ask about your plans after you finish secondary school, and the people who may have an influence on these plans. Please follow the instructions for each question.

1. Which of the following options would you **prefer to do** when you finish Year 11 (after your GCSEs)? **Please write the appropriate letter from A to H in the boxes below:**

<b>A.</b> Continue studying at this school	1 <sup>st</sup> choice:
<b>B.</b> Study full-time at a college	
<b>C.</b> Study part-time at a college while working	2 <sup>nd</sup> choice:
<b>D.</b> Take an apprenticeship (a training course in a practical subject, e.g. plumbing, hairdresser, etc)	
<b>E.</b> Work in the family business	
<b>F.</b> Work in a full-time job	
<b>G.</b> Work in a part-time job	
<b>H.</b> Other If you choose 'other', please tell us what:	

2. How confident are you that you will be able to get your first choice? **(Please circle)**

Not at all confident	Somewhat confident	Very confident
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3. Which of these might stop you from continuing your education after Year 11?  
**(Please tick all the boxes that apply to you)**

Low GCSE grades	
Parents	
Friends	
Other relatives	
Having to leave friends and family	
I am not interested in studying	
Having to care for someone in the family	
I don't know what I really want to do	
I want to start earning money in a full-time job	
I do not like school	
I do not feel that going to school is important	
I do not have enough money	
None of the above	

4. Do you plan to go to university? **(Tick one statement only)**

Yes		No		I don't know	
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If you plan to go to university, what subject would you most like to study?

Subject name	
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**5. Who will influence or inspire your decisions about what you want to do after Year 11?**

**(Please tick one box in each line)**

	YES	Maybe	NO
My friends			
My parents			
Teachers			
My brothers or sisters			
My cousins			
Other relatives (aunts, uncles, grandparents)			
Counsellors at school			
Other (please tell us _____)			

**6. Please also tell us if you know of any people who have been to university by ticking the appropriate box in the following table:**

	YES	NO	At university now	I don't know
My parents/carers				
My brothers or sisters				
My friends				
My cousins				
Other relatives (aunts, uncles, grandparents)				
Other (please tell us _____)				

**7. What job would you like to do in the future?**

Job	
Why?	

## Part D – How maths is taught and learnt

In this section we want to find out how maths is taught this year.

Please tell us, how often does the following happen in your maths lessons?

[Please circle the appropriate number in each line]		Never	Rarely	Sometimes	Always
1	The teacher asks us questions.	1	2	3	4
2	The teacher asks us to explain how we get our answers.	1	2	3	4
3	The teacher starts new topics with problems about the world.	1	2	3	4
4	The teacher tells us to work more quickly.	1	2	3	4
5	The teacher uses the computer to teach some topics.	1	2	3	4
6	The teacher gives us problems to investigate.	1	2	3	4
7	The teacher expects us to remember important ideas we learned in the past.	1	2	3	4
8	The teacher tells us which questions/activities to do.	1	2	3	4
9	The teacher asks us what we already know about a lesson topic.	1	2	3	4
10	The teacher tells us what value the lesson topic has for future use.	1	2	3	4
11	We work together in groups on projects.	1	2	3	4
12	We listen to the teacher talk about the topic.	1	2	3	4
13	We copy the teacher's notes from the board.	1	2	3	4
14	We talk with other students about how to solve problems.	1	2	3	4
15	We ask other students to explain their ideas.	1	2	3	4
16	We do projects (assignments) that include other school subjects.	1	2	3	4
17	We work through exercises from the textbook.	1	2	3	4
18	We learn how mathematics has changed over time.	1	2	3	4
19	What we learn is related to our out-of-school life.	1	2	3	4
20	We learn that mathematics is about inventing rules.	1	2	3	4
21	We get assignments to research topics on our own.	1	2	3	4
22	We use calculators.	1	2	3	4
23	We use computers.	1	2	3	4
24	We use other things like newspapers, magazines, or video.	1	2	3	4
25	We discuss ideas with the whole classroom.	1	2	3	4
26	We explain our work to the whole class.	1	2	3	4
27. Most of the time my maths lessons feel:		Too easy		About right	Too hard

28. If you use the computer or the calculators for your maths lessons, please tell us what are you using them for:

We use <b>computers</b> for...	
We use <b>calculators</b> for...	

## Part E- How confident are you with different topics in mathematics?

In this section, we are asking you to say how confident you would be at using mathematics to solve different problems. **We don't ask you to actually solve the problems.**

Imagine that you have been given the following questions to do. You would be able to use your notes, textbooks, calculator, and so on when necessary. Please tell us how confident you are that you would be able to solve each problem, **without actually doing the problem.**

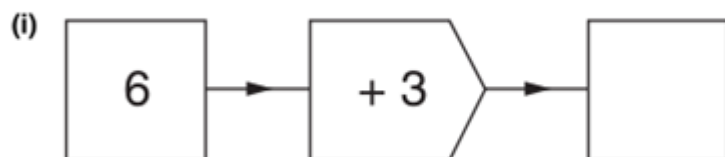
**How confident are you that you are able to solve problems of the kind given in each case?**

Please circle one response for each task.

[PLEASE DO NOT TRY TO COMPLETE THE TASK]

1. How confident are you to solve problems involving **number machines** such as:

Complete these number machine calculations by filling in the empty boxes.

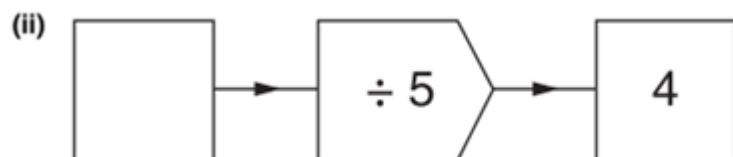


Not confident at all

Not very confident

Fairly confident

Very confident



Not confident at all

Not very confident

Fairly confident

Very confident

2. How confident are you to solve **simple substitutions** such as:

Complete the table of values for  $y = 3x + 4$

$x$	0	1	2	3	4	5
$y$	4		10		16	19

Not confident at all

Not very confident

Fairly confident

Very confident

[PLEASE DO NOT TRY TO COMPLETE THE TASKS]

3. How confident are you to solve **problems involving money** such as:

Emily has these coins.



How much more money does Emily need to make exactly £5?



£

Not confident at all

Not very confident

Fairly confident

Very confident

4. How confident are you to solve **place value problems** such as:

Write the number 4117 to the nearest hundred.

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Not confident at all

Not very confident

Fairly confident

Very confident

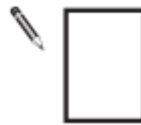


5. How confident are you to solve **problems involving fractions** such as:

Stefan has a bag that contains 3 blue marbles and 5 red marbles only.



What fraction of the marbles in the bag are blue?



Not confident at all

Not very confident

Fairly confident

Very confident

6. How confident are you to solve **place-value problems** such as:

Here are four digit cards.



Use each digit card **once** to make the decimal number **nearest to 20**



Not confident at all

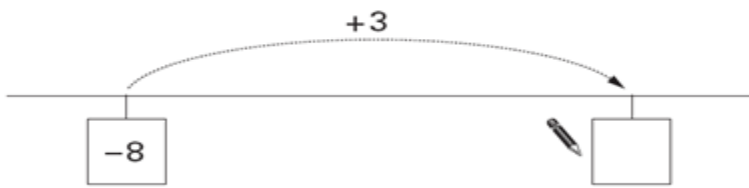
Not very confident

Fairly confident

Very confident

7. How confident are you to solve **number line problems** such as:

Write the missing number on the number line



Not confident at all

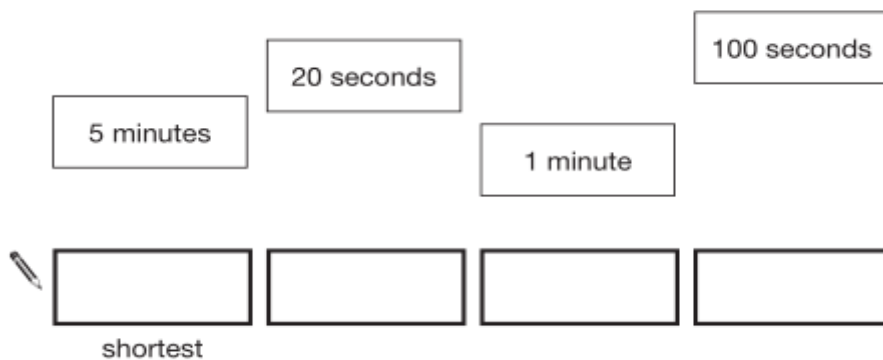
Not very confident

Fairly confident

Very confident

8. How confident are you to solve **problems involving different units** such as:

Put these times in order, starting with the shortest.



Not confident at all

Not very confident

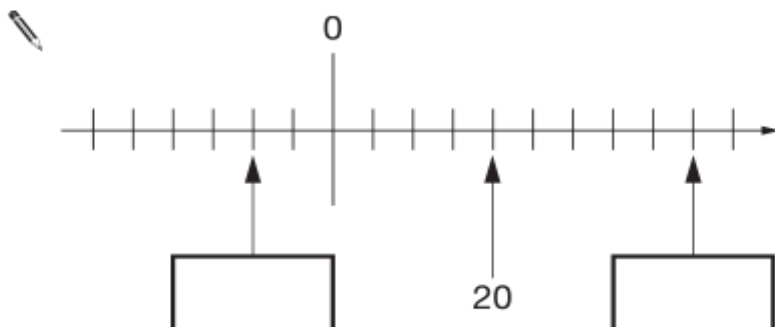
Fairly confident

Very confident

9. How confident are you to solve **problems with number lines** such as:

Here is part of a number line.

Write the missing numbers in the boxes.



Not confident at all

Not very confident

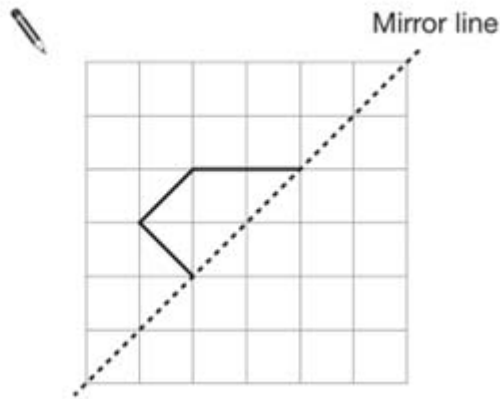
Fairly confident

Very confident

[PLEASE DO NOT TRY TO COMPLETE THE TASKS]

10. How confident are you to solve **problems that involve reflection in a mirror line** such as:

The diagrams in this question are drawn on square grids.  
Reflect the shapes in the mirror lines.



Not confident at all

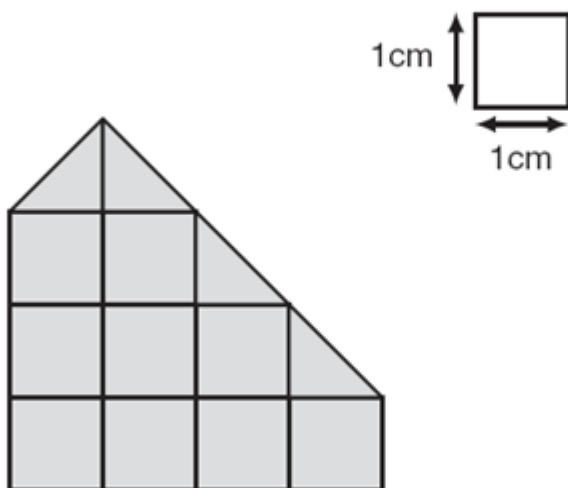
Not very confident

Fairly confident

Very confident

11. How confident are you to solve **area problems** such as:

What is the **area** of the shaded shape in square centimetres?



Not confident at all

Not very confident

Fairly confident

Very confident

12. How confident are you to solve **problems that require reading information from a table** such as:

The table shows some information about five children.

Name	Gender	Age	Hair Colour
Aaron	Male	6	Black
Becky	Female	10	Brown
Kim	Female	6	Brown
Darren	Male	9	Blonde
Emily	Female	4	Red

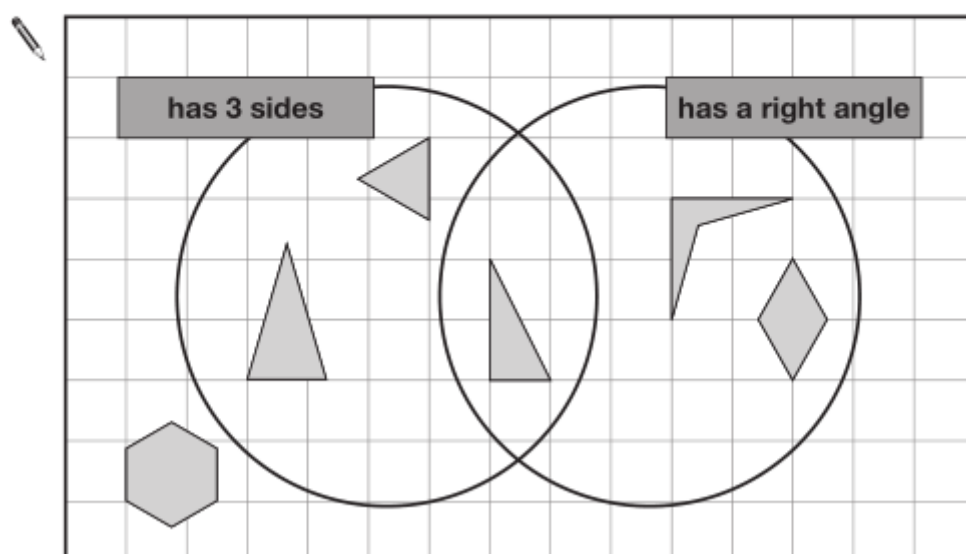
(a) Write down the colour of Darren's hair.

Not confident at all      Not very confident      Fairly confident      Very confident

13. How confident are you to solve **sorting problems** such as:

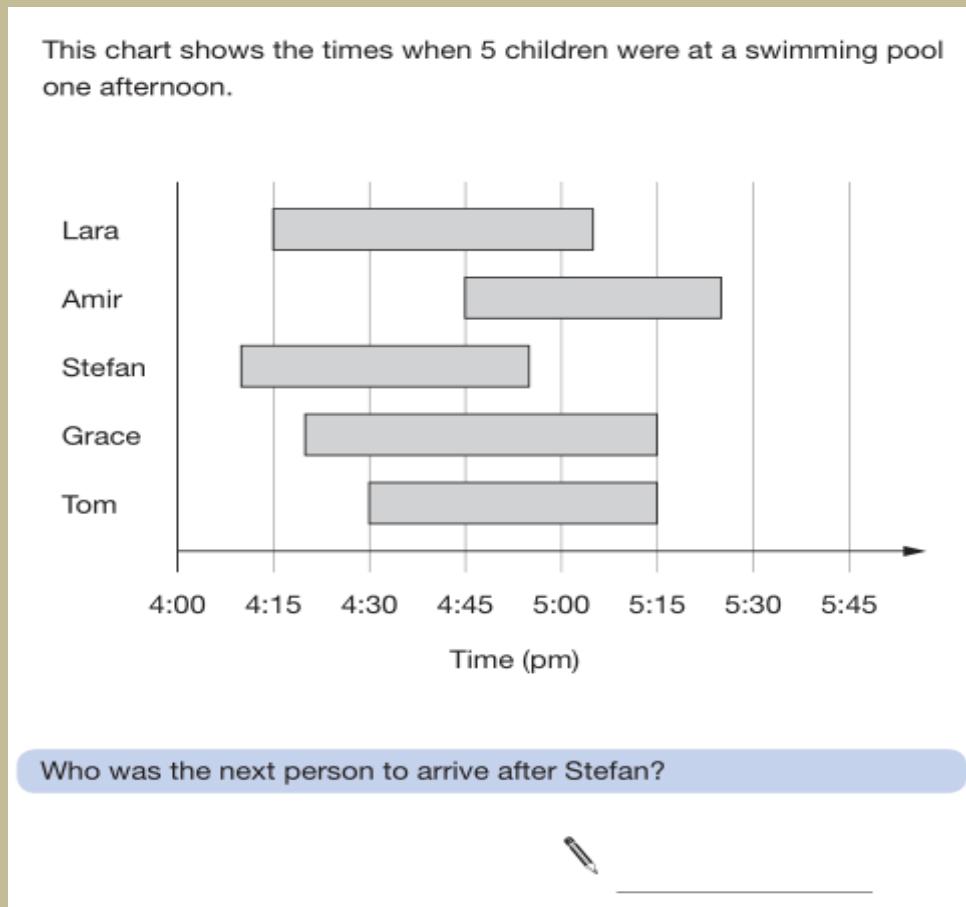
Here is a diagram for sorting shapes.

One of the shapes is in the wrong place.  
Put a cross (x) on it.



Not confident at all      Not very confident      Fairly confident      Very confident

14. How confident are you to solve **problems where you interpret charts** such as:



Not confident at all

Not very confident

Fairly confident

Very confident

15. How confident are you to solve **probability problems** such as:

Aidan puts 2 white counters and 1 black counter in a bag.



He is going to take one counter without looking.

What is the **probability** that the counter will be **black**?

Not confident at all

Not very confident

Fairly confident

Very confident

**16.** How confident are you to **calculate the range of a set of numbers** such as:

A rugby team played 7 games.

Here is the number of points they scored in each game.

3      5      8      9      12      12      16

(a) Work out the range.

\*\*\*\*\*

Not confident at all

Not very confident

Fairly confident

Very confident

**17.** How confident are you to solve **problems involving two-way tables** such as:

Here is some information about class 7J.

There are 30 pupils altogether.

There are 2 more girls than boys.

A quarter of the girls are left-handed.

There are 7 left-handed pupils altogether.

Use this information to complete the two-way table below.

	Boys	Girls	Total
Left-handed			
Right-handed			
Total			30

Not confident at all


Not very confident

Fairly confident


Very confident

18. How confident are you to solve **problems involving measurement and estimation** such as:

Here is a picture of Fred standing outside his house.



(a) Which measurement below is most likely to be **Fred's height**?  
Put a ring round the correct answer.

 0.8 metres      1.8 metres      2.8 metres      3.8 metres

Not confident at all

Not very confident

Fairly confident

Very confident

19. How confident are you to solve **number sequence problems** such as:

Each rule below makes a sequence.  
Use the rule to write the **next two numbers** for each sequence.

Rule: <b>Add 3</b> to the last number				
2	5	8	_____	_____

Not confident at all

Not very confident

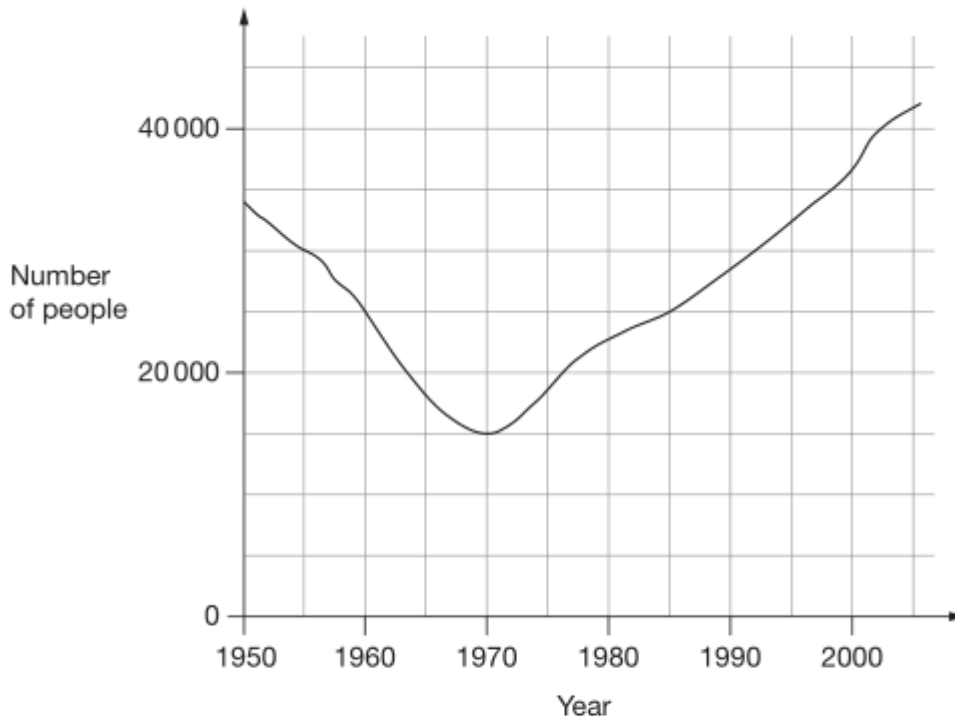
Fairly confident

Very confident

20. How confident are you to solve **problems which involve reading graphs** such as:

20

This graph shows the number of people living in a town.



Look at the graph.

How many people lived in the town in 1985?



Not confident at all

Not very confident

Fairly confident

Very confident

Please write any comments here, if necessary.

**Thank you very much for completing the survey!**

Your responses are completely anonymous and will be treated as confidential.

If you have any queries about this research project, please check our website [www.teleprism.com](http://www.teleprism.com)

or contact Maria Pampaka on 0161 275 7213.