

MATHEMATICS TEST

Year 9 – Part C

This part of the test contains only two problems which you have 80 minutes to solve.

It is very important that you clearly show how you have solved the problems.

After each problem you will find a square with a description regarding what your teacher will take into account when assessing your work.

All calculations and answers should be written on paper that is handed in at the end of the test.

The test packet must be handed in with your solutions.

You may use a calculator, ruler and compass.

Name: _____

School: _____ Class: _____

Date of birth: Year _____ Month _____

Day _____

Girl

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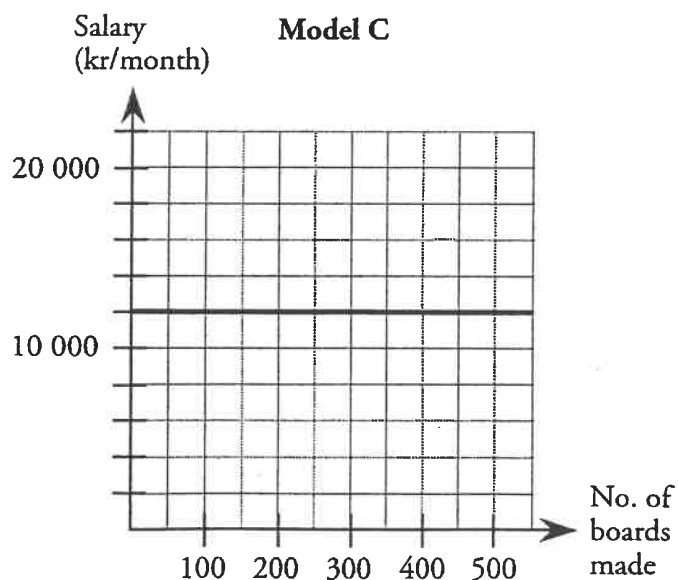
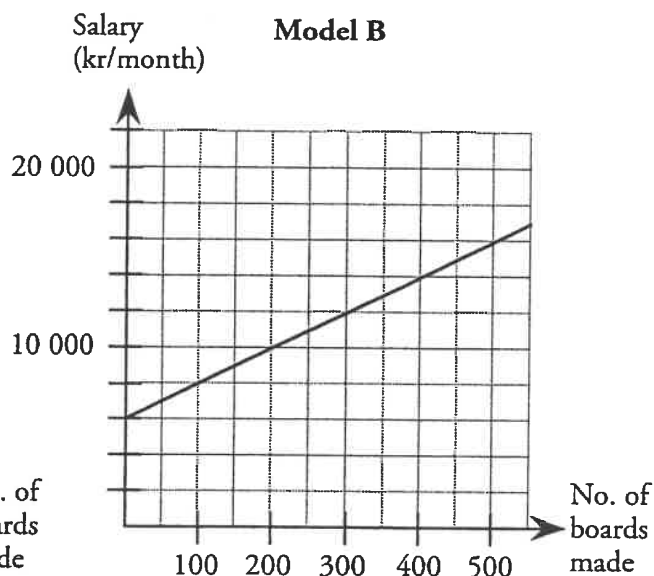
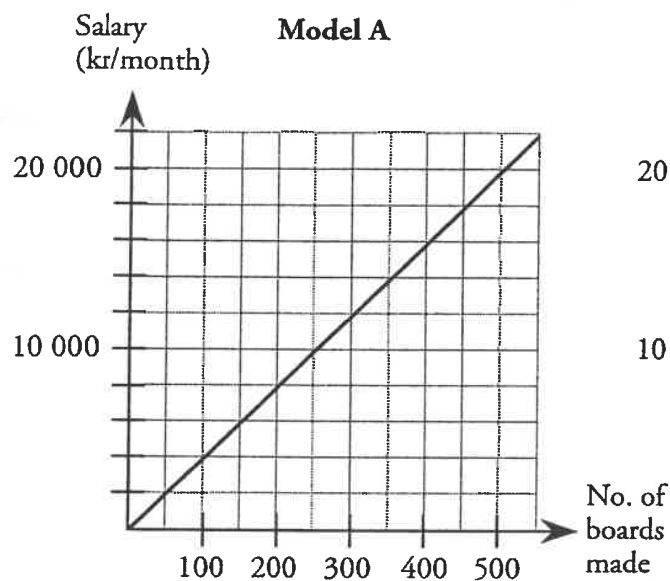
Boy

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Salaries

Alfred, Beata and Conny work for a company called LAD AB which makes circuit boards. Employees in the company can decide their salaries according to three different models.

The diagrams below show the three models, A, B and C.



Alfred has chosen Model A for his salary, while Beata prefers Model B and Conny has decided on Model C.

- a) In March Alfred, Beata and Conny each made 350 circuit boards. How much did they each earn during March?
- b) Imagine you were to start working at LAD AB and could decide which model to choose. Make a list of the advantages and disadvantages in each of the three models.
- c) Do one or more of the three models show a salary which is proportional to the number of boards made?
If so, which model or models?
State reasons for your answer.
- d) Give a formula for each model which you can use to work out the salary, if you know how many boards the employee has made in a month.

When assessing your work, the teacher will take into account the following

- what mathematical skills you have shown
- how well you explain your work and give reasons for your answers
- how you have interpreted the diagram
- how you have described, compared and discussed the various salary models.

Circumference

In this task you will have to work with four different geometric figures. All figures should have a similar circumference of 12 cm.

You should work with the following geometric figures

- a rectangle, where the length is twice as long as the width
- a square
- an equilateral triangle
- a circle.

You should study and compare the areas of the figures.

What conclusions can be made?

When assessing your work, the teacher will take into account the following

- how clearly and correctly you have drawn the figures
- whether you have made the correct calculations
- how well you explain your workings and methods
- how well you have stated the reasons for your conclusions.