SUBJECT TEST

Mathematics

GRADE 9

Tests which are re-used are protected by paragraph **3 of Chapter 4 of the Official Secrets Act**.
The intention is for this test to be re-used until **2009-06-30**.
This should be considered when determining the applicability of the Official Secrets Act.

Spring 2009

Part B2

Name

Skolverket

Part B2

This part consists of questions you may work with for about 50 minutes.

It is very important that you carefully explain the reasoning in your solution.

In the box below the question you can see what considerations the teacher will apply in assessing your work. At the most the question can yield 4 g-points and 4 vg-points. The symbol ¤ indicates that you may demonstrate MVG-qualities in your solution.

Aids: Access to calculator.

Name: _____

School: _____ Class:_____

Birth date: Year ___ Month _____ Day _____

Female ❒ Male ❒

Solutions and answers must be written on separate paper, not on this question paper. The question paper must be handed in, together with your solution.

Illustrations: Jens Ahlbom

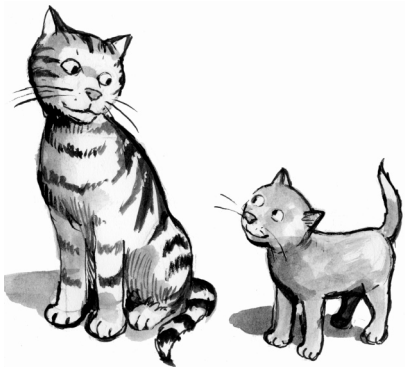
How old can a cat be?

4/4 ¤

A cat does not live as long as a human being. So you might say that a cat ages faster than a human. To compare a cat's age (number of cat years) with those of a human (number of years) one might use different models.

Model A: Each year corresponds to 7 cat years.

Model B: The first year corresponds to 15 cat years.
The second year corresponds to 10 cat years.
Each additional year corresponds to 4 cat years.



a) Three years ago Maria got a newly born kitten. How many cat years old is her cat today according to Model A and Model B respectively?

b) Copy and fill in the table.

Then draw a coordinate system with the number of years on the *x*-axis and the cat's age on the *y*-axis.

Plot two graphs in your coordinate system, one for Model A and one for Model B.

Year	Cat's age	
	Model A cat years	Model B cat years
1	7	15
2	14	25
3		
4		
5		
6		

c) How long does it take until the two models give the same age for a cat? Determine this as exactly as you can.

d) Cats can get rather old. It is not unusual that they live more than 20 years. Compare the two models for the life span of cats (number of cat years). Which of the two models is most reasonable? Explain and defend your conclusions.

In assessing your work the teacher will take into consideration
- what mathematical knowledge you have shown
- how well you have defended your conclusions
- how well you have presented the solution.

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