SUBJECT TEST

Mathematics

GRADE 9

Spring 2009

Part C

Name

Skolverket

Part C

After each question the maximum total number of points possible for your solution is shown. For example (2/1) indicates that the question can give a maximum of 2 g-points and 1 vg-point. You may demonstrate MVG-qualities in your solutions to questions marked with the symbol ¤.

Complete solutions are required for all questions.

A mere answer does not give any points.

Your solution must be clear enough so that other persons may easily read and understand what you mean. It is important that you present all your work. You may get some points, even for a partial solution.

Aids: Access to calculator, ruler and formula page.
Time: 100 minutes.

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

1. Emma works at the market square selling fruit. She works for 2.5 hours and earns 140 kr. How much does she earn in 3.5 hours at the same hourly wage? (2/0)

2. At lunchtime Emma shares a pizza with Denniz and Leyla. They eat up the whole pizza. Leyla eats as much as Emma and Denniz together. Denniz eats twice as much as Emma. How large part of the pizza do each of them eat? Show using figures and/or calculations that your division of the pizza is correct. (2/0)

In questions 3, 4 and 5 you should use the weights and prices for fruits shown in the picture.

3. Emma does the following calculations when selling fruit. Describe in ordinary language what she is calculating.

a) $3.4 \cdot 12 = 40.80$ (1/0)

b) $50 - 2.5 \cdot 18 = 5$ (1/1)

4. How many percent cheaper is it to buy whole watermelon rather than watermelon in pieces? (1/1)

5. 3 kiwi fruits cost 10 kr. Each kiwi fruit weighs about 60 g on the average. What is the price per kilo? (1/1)

6. Denniz wants to measure how long the market square is. He has a bike with tires that are 27 inches in diameter. One inch is 2.54 cm. He bikes the whole length of the one side of the market square. The bike wheel has then rotated 18 revolutions. How many meters has he biked? (2/1) ¤

7. David is practicing throwing darts. Each dart can give 10 points at the most and 0 points at the least. His goal is to get that good at darts so that his mean for five dart throws will be more that 7 points.

a) On the first trial he gets the following result: 8, 8, 3, 6, 0. What is his mean this time? (1/0)

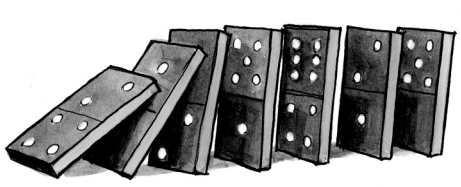
b) The next time his first three darts land on 8, 9 and 6. Then, when David has thrown his fourth and fifth darts, his mean is exactly 7. What score might David have got with darts 4 and 5 for this to be the case? (1/2)

8. The diagrams show how the medals were distributed for some different countries at the Olympics in Peking in 2008. Determine whether each of the claims made below is true or false. Explain your reasoning.

a) Great Britain won more gold medals than Australia. (1/0)

b) Spain won more silver medals than Australia. (1/1)

9. The Chinese woman Ma Lihua holds the world record in setting up and then knocking over the greatest number of dominoes.



a) Ma Lihua set up 303 628 dominos. That took her 6 weeks and she worked 12 hours every day. How many dominoes did Ma Lihua set up per minute, on the average? (1/1)

b) It took four minutes for the dominoes to fall and only six of them remained standing afterwards. How many milliseconds did it take on the average for one domino to fall down? (0/2)

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10. In a fruit plantation there are some mango trees (□) surrounded by orange trees (○) as shown in the figures.

Figure 1

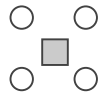


Figure 2

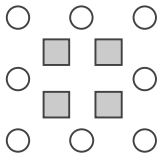
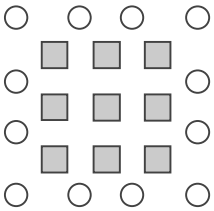


Figure 3



a) How many mango trees and how many orange trees would there be in figure 5? (2/0)

b) How many mango trees and how many orange trees are there in figure *n*? Explain your answer. (0/2) ¤

c) In figure 2 there are twice as many orange trees as mango trees. Investigate in what figure there are twice as many mango trees as orange trees. (1/1) ¤

11. Borcello's pizzeria sells round pizzas in two different sizes but with the same thickness. The larger pizzas have a radius that is 20 % larger than that of the small ones. The larger are 25 % more expensive. Which pizza should one buy if one wants to get as much pizza as possible for the money? (1/2) ¤

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