

Mathematics

Delprov D

Årskurs

9

Elevens namn och klass/grupp

Instructions

Complete solutions are required for all the tasks except for one.

A complete solution means that your presentation has to be so clear that someone else can read and understand what you mean. It is important that you present all your work. You can get points for a partly solved task.

No points are given for correct answers alone except for task 27a, which is marked *Only the answer is required*.

The maximum number of points you can get for your solution is shown after each task. For example (2/1/0) means that the task can give 2 E-points, 1 C-point and 0 A-points.

Aids: calculator and formula sheet.

Time for the part: 100 minutes.

Name: _____

School: _____ Class: _____

Date of birth (year/month/day): _____

Girl Boy

The solutions and answers must not be written in the student booklet but must be written on a separate sheet of paper instead. The student booklet has to be handed in along with the solutions.

Good luck!

Illustrations: Jens Ahlbom

You will now join Erik, Liam and Amy both in and out of school.



When assessing your work, the teacher will take into account

- the mathematical skills you have shown
- how well you have described your reasoning
- how well you have presented your work.



17. The school dining hall serves lunch to 460 people every day. One day, the selection is lasagne, fish gratin and pasta salad. Of those eating in the dining hall, 60 % choose lasagne and 150 people choose fish gratin. How many people choose pasta salad?

(3/0/0)

18. Liam and Amy are planning a theme night at the school for parents. There will be bowls of fruit in every classroom.



Each bowl is to contain 5 oranges, 8 bananas and 12 apples. Each crate contains a total of 400 pieces of fruit. The ratio between the different fruits is the same in the crate as it is in the bowls. How many of each sort of fruit are there in the crate?

(3/0/0)

19. Erik wants to bake his own bread. He buys a bread machine for SEK 495. The ingredients for a loaf of bread cost SEK 17. In the shop, a similar loaf costs SEK 29. At least how many whole loaves of bread does he need to bake to save the cost of the bread machine? (2/1/0)



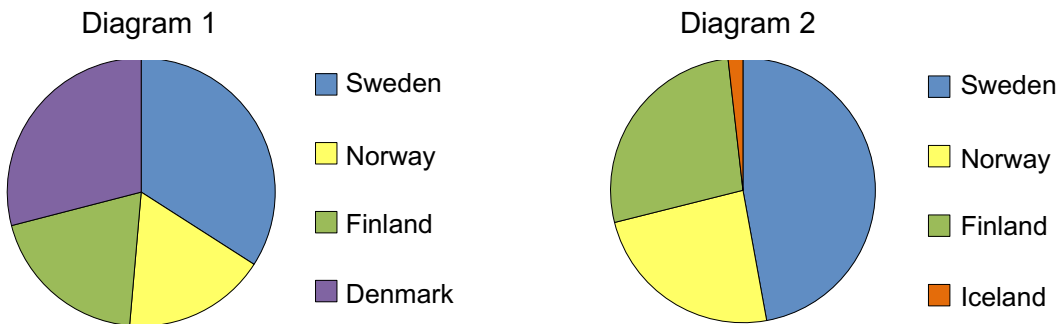
20. Amy and Liam go to a café. Amy buys two buns and two glasses of juice. She pays SEK 74. The customer before her buys one glass of juice and two buns, paying SEK 53. Liam wants to know what one bun costs. What does one bun cost? (1/2/0)



21. Amy and Liam are thinking about the environment and all the rubbish we people throw away. At school, they have learned about how much household refuse is thrown away in the different Nordic countries in one year.

Country	Household refuse (thousands of tonnes)
Sweden	4 190
Norway	2 130
Finland	2 410
Denmark	3 570
Iceland	160

Each diagram includes four of the countries.



- a) Look at diagram 1. Determine the approximate percentage of Sweden's share of household refuse. (1/0/0)
- b) Explain why Sweden's share is different in the two diagrams. (1/1/0)

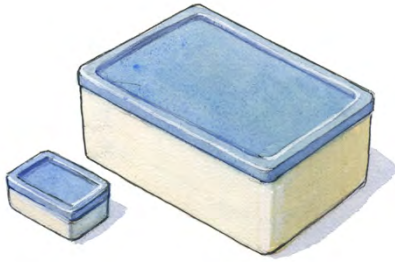
22. Erik and Liam have been given a box of salami sausages to sell so that they can earn some money for a class trip. When Erik has sold $\frac{1}{3}$ of all the sausages and Liam has sold $\frac{1}{4}$ of all the sausages, 15 salami sausages remain. How many salami sausages were there in the box to start with?
(1/2/0)



23. Amy is going to mix a salad from 3 different vegetables. She has 5 different vegetables to choose from. In how many different ways can she make her salad?
(1/2/0)



24.

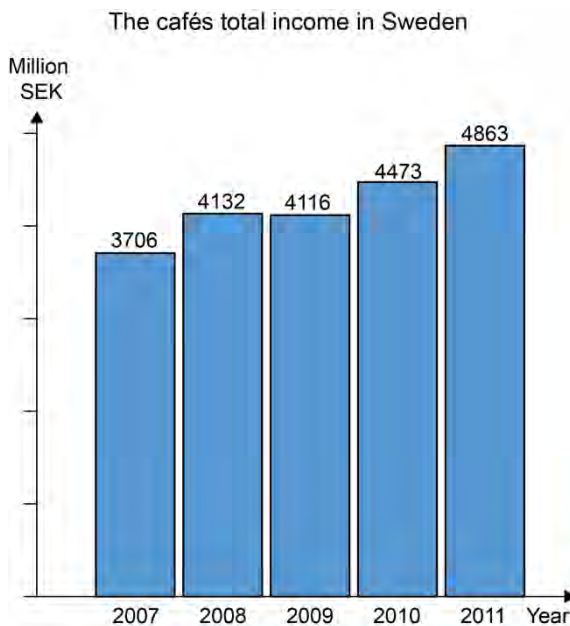


The picture has not been drawn in scale.

Liam is making models of two lunch boxes. They are to be made from the same material. All the measurements of the big lunch box are 3 times as long as those of the little lunch box.

Liam claims that the volume of the big box is 9 times greater than the volume of the little box. Is that correct? Motivate your answer. (0/2/1)

25. In recent years, visiting cafés has become more and more popular in Sweden, and there has been an increase in the total income of cafés.



- a) What is the percentage increase in total income from the year 2007 to the year 2011? (0/2/0)
- b) It is thought that the total income will increase by about 7 % per year from the year 2011. How much will the total income of cafés then be in the year 2016? (0/2/2)

26. A shop sells a bar of chocolate that weighs 200 g and costs SEK 25. The size of the bar changes so that the new bar of chocolate weighs 10 % more. At the same time, the shop raises the price of the new bar by 30 %. What is the percentage change in the price per kilogram? (1/2/1)



27. Class 9 B is organising a summer party to raise money for a children's home. Over the last few years, the class has organised similar parties.

Last year's party-goers paid a total of SEK 8 380. Adults paid SEK 120 and children SEK 50 to go to the party, so Erik helps her to set up the following equation: $50 \cdot x + 120 \cdot (92 - x) = 8\,380$

- a) What does x stand for? *Only the answer is required.* (1/0/0)
- b) Help Amy solve the equation. Show your calculations. (0/2/1)
- c) How many adults and how many children came to the party? (0/2/1)



28. Amy and Liam regularly visit the gym to train. You can either pay SEK 100 per visit or buy a membership card that lets you pay a lower fee each time you go. Amy and Liam choose to buy membership cards.

In one year, Liam went to the gym 34 times and Amy went 26 times. Liam paid a total of SEK 2 820 for his membership card and fees, and Amy paid a total of SEK 2 180 for her membership card and fees. How much did they pay each time they went to the gym, and what was the cost of the membership card? (0/2/3)

