## Ämnesprov, läsår 2013/2014

## Mathematics

## Delprov C

## Årskurs



For most of the tasks in this part you must clearly show how you have solved the problem. Your written solution must be clear enough so that another person can read it and understand what you mean.

If you make calculations on the calculator they must be shown on the paper you hand in. You can be given points for partially solving a problem.

The teacher will assess the following aspects:

- How you solve the problem.
- What knowledge you show about mathematical concepts.
- What methods you choose and how you use them.
- How well you write your solution account.
- How well you make use of mathematical language.


You will meet Samira, Leo, Maja and Kevin who are all in class 6A. They are going on an excursion to a big meadow at the edge of town. They are very curious about what will happen. At the far end of the meadow is an old wall, and behind it is a large area that has been closed off for a whole year, where objects have been found that are thought to come from several different villages. One of these villages is thought to be really old. Now that the area is finally open again, class 6 A will be the first group of school children allowed in.
13. Leo will set off from home 45 minutes before the school excursion begins.
They will set off on the excursion at 08:20 am. What time does he leave home?
Show your working.
14. On the day of the excursion the temperature is $18{ }^{\circ} \mathrm{C}$.

Last winter when the class went on an excursion the temperature was $-4^{\circ} \mathrm{C}$.
What is the difference in temperature?
Show your working.

15．Leo，Samira and Maja pack their backpacks for the excursion． The diagram shows how much their backpacks weigh．

Diagram

| Leo | ［18 | ［17 | ［17 | ［11 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Samira | ［18 | ［17 | 昭 | 昭 | ［10 | 0 |  |  |  |  |  |
| Maja | f1t | ［17） | 明 | A1 | ［10 | ［11 | ［1 | ［1 |  |  |  |

Each backpack in the diagram is equal to 2 hg ．

a）How much does Leo＇s backpack weigh？
Write the answer only．
b）How much does Samira＇s backpack weigh？
Write the answer only．
c）How much weight needs to be added for Maja＇s backpack to weigh 2 kg ？
（2／0／0） Show your working．
16. Maja and Kevin cycle to the excursion, which will take place in a meadow. Both start from their houses. Maja's house is marked on the map.


Scale 1:25 000
1 cm on the image is equal to 250 m in reality.

## a) How far does Maja cycle? <br> Show your working.

(2/0/0)
b) Kevin cycles from his house to the meadow. He cycles 2 km .

Put a cross on the map where you think he might live.
Draw the route he cycles.
17. Kevin sees a squirrel. Squirrels weigh about 250 g . Kevin weighs 48 kg .
(1/2/0)
How many squirrels, put together, weigh as much as Kevin?
Show your working.
18. Samira asks the pupils in the class how many worms each of them has found.

a) How many pupils in the class have found 2 worms?

Write the answer only.
b) What is the mode, that is, the most common number of worms found? Write the answer only.
c) How many worms have the pupils found in total? Show your working.
19. Kevin, Leo, Samira and Maja have all turned 13 years old.

In how many years will their combined ages total 100?
Show your working.
20. At the location there is a wall.

Here is an image that shows how the wall has been built.

In reality it is 288 cm tall.
The wall is made from two types of bricks: brown and grey. The brown bricks are twice as high as the grey bricks.

How high is a brown brick and how high is a grey? Show your working.

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| :---: | :---: | :---: |
| - |  |  |
| $\square$ | $\underline{1}$ | 1 |
| $\square$ |  |  |
| $\square$ | $\square$ | 1 |
|  |  |  |
| 1 | T | 1 |
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| 1 | 1 |  |
|  |  |  |
| 1 | 1 |  |
|  |  |  |
|  | 1 |  |
|  |  |  |

21. Maja sees another wall. The pupils measure how long it is.

- It is 40 steps long, says Maja.
- It is 30 steps long, says Kevin.

Maja's steps are 60 cm long.
How long are Kevin's steps?
Show your working.

