

Mathematics

Delprov C

ÅRSKURS

6

Elevens namn och klass/grupp

For the questions in this part you need to show how you work them out. Your working out must be clear enough so that someone else can read and understand what you mean.

If you do your calculations on your calculator then you must also show them on the paper. You can be given points for partially answered questions.

The teacher will assess:

- How you worked out the questions.
- What knowledge you show about mathematical concepts.
- Which methods you choose and how you use them.
- How well you show your solution.
- How well you use mathematical language.



You will meet Samira, Viktor, Elsa, Leo and Robin who are all in School Year 6. At their school they have been working on the topic of space for several weeks. The work finishes with a project day on space. The day starts by dividing the pupils into groups. The pupils then do different activities in several different classrooms. They also have to read and write about space in the class blog, build models of space rockets, make space aliens that they stuff with cotton wool, and build planets and robots.

In the evening they hold a space party. People who want to can dress up as something to do with space. A lot of them choose to dress up as space aliens.

- 15.** For the project day, the pupils are divided into 30 different groups: (2/0/0)
16 groups with 13 pupils in each group.
14 groups with 12 pupils in each group.
How many pupils are there at the project day?
Show how you work this out.

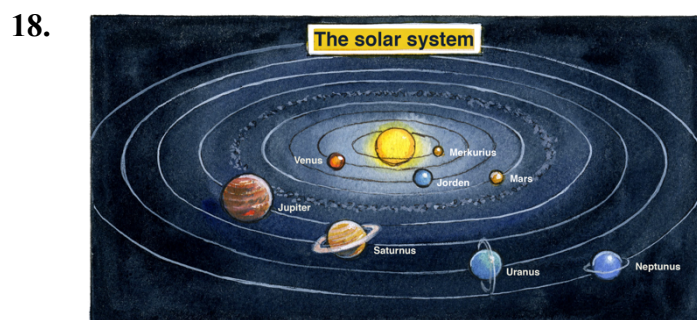
- 16.** The students are writing about space in the class blog. (2/0/0)
There are 25 pupils in the class. The blog currently has 175 followers.
The target is to have 500 followers. How many more followers does
each pupil need to get to reach the target?
Show how you work this out.



17. The pupils are making space aliens in crafts class.
They stuff their space aliens with cotton wool.
A bag of cotton wool weights 3 kg.
Each space alien needs 250 g of cotton wool.
How many space aliens can they make
from one bag of cotton wool?
Show how you work this out.



(2/0/0)



18.

There is a picture of our solar system on the classroom wall.
The picture is 68 cm wide. The length is twice the length of the width.
What is the circumference of the picture?
Show how you work this out.

(2/0/0)

19. In total, the class has built 200 planets. 40 of these have rings.

(2/0/0)

a) What percentage of the planets has rings?

Show how you work this out.

b) Robin has built 7 % of all of the planets in the class.

(1/1/0)

How many planets has Robin built?

Show how you work this out.

20. Christer Fuglesang is a Swedish astronaut.
He made his first spacewalk in 2006.
He started his spacewalk at 21:42 on 12 December.
His spacewalk ended at 04:18 on 13 December.

How long did his spacewalk take?

Show how you work this out.

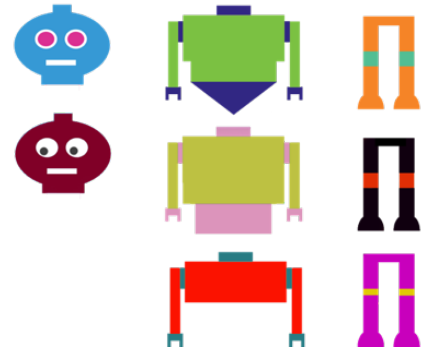


(1/1/0)

21. Leo and Samira are building space robots from different pieces.

(1/1/0)

- a) A space robot must have a head, a body and a pair of legs. In how many different ways can they build their space robot?
Show how you work this out.



Leo and Samira want the space robot to have antennae.
They can choose between the antennae below:

(0/1/1)



- b) In how many different ways can they now build their space robot?
Show how you work this out.

22. Elsa, Samira, Viktor and Robin are baking buns.

(0/3/0)

- Elsa bakes half of all of the buns.
- Samira bakes $\frac{1}{4}$ of all the buns.
- Viktor bakes half as many buns as Samira.
- Robin bakes 24 buns.



How many buns do they bake altogether?

Show how you work this out.

23. Viktor and Leo are mixing space drink.

They need 5.4 litres of space drink.

They pour in the fruit flavoured drink and the fizzy drink.

How much fruit juice do they need to pour in to make the same mixture as the recipe?

Show how you work this out.

Space drink
2 dl fruit flavoured drink
3 dl fizzy drink
4 dl fruit juice

(0/1/1)

- 24.** The class is building space rockets. They launch them and see how far they go. (0/1/2)

- Elsa's rocket goes the furthest.
- The difference in distance between Elsa's rocket and Robin's rocket is 542 cm.
- Viktor's rocket goes 297 cm further than Samira's rocket.
- Robin's rocket goes 83 cm less than Viktor's rocket.

What's the difference in distance between Elsa's rocket and Samira's rocket?

Show how you work this out.

- 25.** At the space party there are both Mars aliens and Venus aliens.

Mars aliens have 6 legs and 1 head.

Venus aliens have 4 legs and 1 head.

At the space party there are 29 heads and 152 legs.

How many Mars aliens and how many Venus aliens are there at the space party?

Show how you work this out.



(0/1/2)

