Mathematics

Delprov C

Årskurs

6

Elevens namn och klass/grupp

Skolverket

For the tasks in this part, you must show your working. Your working must be clear enough so that another person can read and understand what you mean.

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

The teacher will assess:
- How you solve the tasks.
- What knowledge you show about mathematical concepts.
- Which methods you choose and how you use them.
- How well you show your working.
- How well you use mathematical language.

You will meet Samira, Viktor, Alice and Robin who are in year 6. Their school is having a day on the theme of inventions. At the start of the day, the pupils are divided into groups.

In one classroom, they read about and discuss different inventions, and they then get to vote on the one they think is the most important. In another classroom, they get to look for ordinary objects that are inventions. Viktor's group finds a thermometer, a screw and a paper clip. Alice finds post-it-notes of various sizes.

The pupils also get to build cars that are propelled with rubber bands. They are competing with their cars to see which one can go the furthest.

At the end of the day, the pupils prepare an exhibition about inventions.

16. On invention 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 participate in invention day?
Show your working.

17. A jar full of SEK 1 coins weighs 789 g. (2/0/0)
One SEK 1 coin weighs 3.6 g. Viktor empties the jar and when it is empty it weighs 375 g.
How many SEK 1 coins were there in the jar?
Show your working.

SEK 1 coins

18. The class purchases material to build rubber-band cars. (3/0/0)

Box of pencils
SEK 17

Glue
SEK 29.90

Box of rubber bands
SEK 35.80

Box of sequins
SEK 24.60

This is the number of packages they purchase:

Package	**Number**
Pencils	4
Glue	4
Rubber bands	1
Sequins	1

How much does all the material they purchase cost?
Show your working.

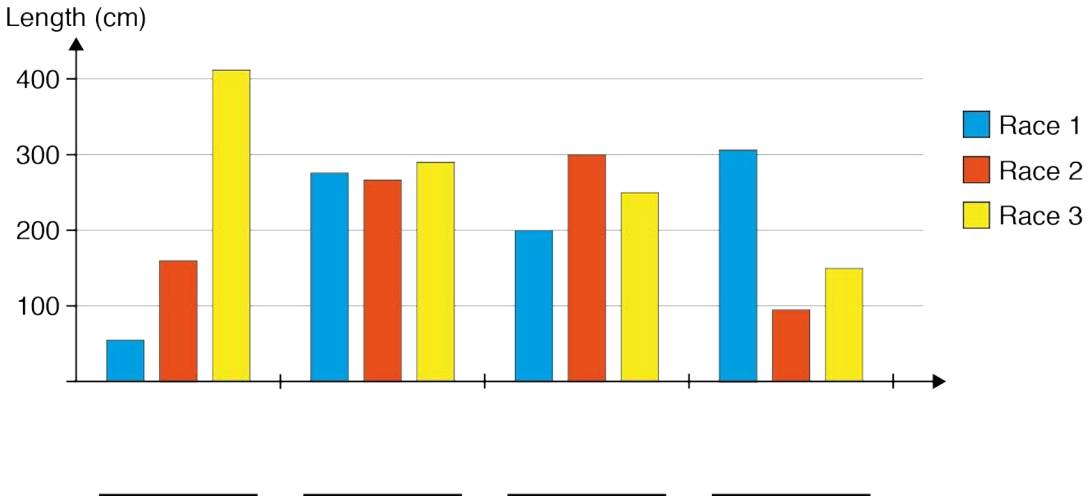
19. Viktor, Samira, Robin and Alice have built a car each.
They are competing to see whose car will go the furthest.
The table shows the results for three of the cars.
Alice's result is missing from the table.

Name	Race 1 (cm)	Race 2 (cm)	Race 3 (cm)
Viktor	308	95	150
Samira	282	277	290
Robin	55	161	412
Alice			

a) How far does Samira's car get in race 2? (1/0/0)

Answer:_____ cm

b) The diagram shows how far the cars get in each race. (1/0/0)
Write the names of Viktor, Samira and Robin on the correct row of the diagram.

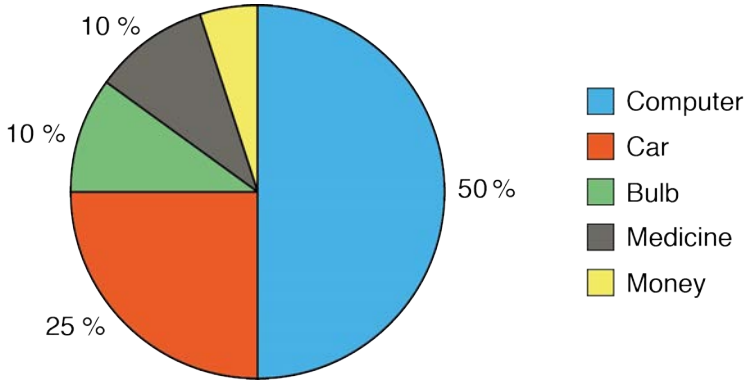


_____ _____ _____ _____

c) Alice's results are also shown in the diagram.
Fill in the results for Alice's car in the table below. (1/0/0)

Name	Race 1 (cm)	Race 2 (cm)	Race 3 (cm)
Alice			

20. The pupils vote on which invention they think is the most important.



a) Which percentage of the pupils vote for money? (1/0/0)

Answer:_____ %

b) 15 pupils vote for the car. How many pupils vote for medicine? (0/2/0)
Show your working.

21. At school there is a group planning the exhibition. (0/1/1)
There are 20 people in the group and the mean of their ages is 12 years.
Three new people whose ages are 10, 11 and 15 join the group.
How does this affect the mean?
Circle and explain your answer.

It increases It decreases It does not change You cannot tell

Explain your answer.

22. Alice, Samira, Viktor and Robin make cinnamon rolls for the exhibition. (0/3/0)

- Alice makes half of all the rolls.
- Samira makes $\frac{1}{4}$ of all the rolls.
- Viktor makes half as many rolls as Samira.
- Robin makes 24 rolls.

How many rolls do they make all together?
Show your working.

23. On the school's invention day, the pupils choose food and something to drink for lunch. They make three choices.

a) Samira has chosen vegetarian sausage. (2/0/0)
Now she will choose bread and a drink.
How many different lunch combinations can she make?
Show your working.

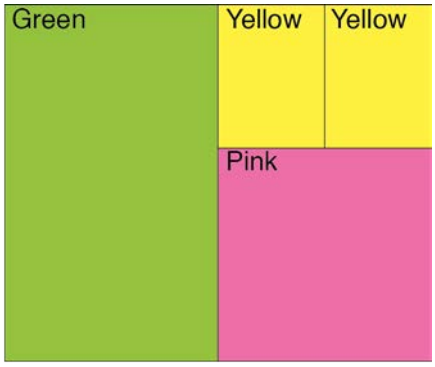
b) Viktor has not decided yet. (0/2/0)
He will choose bread, sausage and a drink.
How many different lunch combinations can he make?
Show your working.

24. One of the world's longest bridges is located in China and it is 42.5 km long. The Öresund Bridge between Sweden and Denmark is 7 800 m long. (2/0/0)

a) How much longer is the bridge in China compared to the Öresund Bridge?
Show your working.

b) A car drives 90 km in one hour. Roughly how many minutes does it take for the car to cross the Öresund Bridge? (0/1/2)
Show your working.

25. The post-it note was invented in 1977. Alice has three different sizes. She places the notes like this. (0/0/2)



The picture is not drawn to scale.

- The pink note is a square where the side is 7.5 cm long.
- The shortest side of the green note is the same length as one side of the pink note.
- The area of the green note is 93.75 cm^2.

How long is the longest side of the *yellow* note?
Show your working.

PRIM gruppen