

Ämnesprov, läsår 2014/2015

# Mathematics

Delprov D

Årskurs

6

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Elevens namn och klass/grupp



For the tasks in this part, you must clearly 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 problem.

The teacher will assess:

- How you solve the problems.
- 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.



Leo and Maja are now in Australia. They are at their cousins' – Simon, Amy and their little sister. First of all, they are going to visit a zoo near the sea. Afterwards they are going to a nice beach. There is a dolphin centre at the zoo, where they take care of dolphins that have been injured or are sick. They can stay in a tank until they can be released out to sea again. When the cousins go to pay to enter the dolphin centre, they want help each other to work out how much it costs for one of the families. In Australia they pay with Australian dollars (shortened to AUD).

25. The family is going to pay the entrance fee for the zoo.  
The family consists of two adults and their three children aged 5, 13 and 16.

**Entrance fee**

Adult ..... 44 AUD  
Children aged 4–15 ..... 33 AUD  
Children under the age of 4 ..... free

AUD means Australian dollars  
1 AUD = 6.80 SEK

- a) How much will the family pay for the entrance fee? (2/0/0)  
Answer in AUD.  
*Show your working.*

- b) What will the cost be for the whole family in SEK? (2/0/0)  
*Show your working.*

26. Amy and Leo look at the dolphins in a tank.  
The perimeter of the tank is 120 m.  
It is twice as long as it is wide.  
How long and how wide is the tank?  
*Show your working.*

(2/1/0)



27. Simon, Amy and Maja are allowed to feed the dolphins.  
They have 27 fishes to give them.  
Amy gives 9 fishes to the dolphins.  
Maja gives half as many fishes as Simon.  
How many fishes does Simon give to the dolphins?  
*Show your working.*

(1/1/0)



28. Amy and Simon go collecting seashells on a beach.  
 Amy finds 130 and Simon finds 180.  
 They decide to share them equally.  
 How many seashells will Simon give to Amy?  
*Show your working.*



(2/0/0)

29. Simon lays out a pattern with the seashells.



Figure 1



Figure 2



Figure 3

Figure 4

- a) How many seashells are there in Figure 4? *Write the answer only:* \_\_\_\_\_ (1/0/0)
- b) How many seashells are there in Figure 10? (1/1/0)  
*Show your working.*

- c) You only know the number of the figure. (0/1/1)  
 How can you then decide the number of seashells in the figure?  
*Explain in words or use a formula.*

30. The soft drink in the big bottle will be poured into small bottles.  
Each small bottle holds 30 cl.  
How many small bottles are needed?  
*Show your working.*



(2/0/0)

31. Maja and Amy each have their own chocolate bar.  
Maja's bar has 20 pieces and Amy's bar has 30 pieces.  
Each piece is the same size and weighs the same.



- a) Maja eats  $\frac{1}{5}$  of her chocolate bar and Amy eats  $\frac{1}{6}$  of hers.

(2/0/0)

Who has eaten the most pieces?

*Show your working.*

- b) When Maja has eaten  $\frac{3}{5}$  she has 32 g of her chocolate bar left.

(0/3/0)

How much did her chocolate bar weigh at the beginning?

*Show your working.*

32. Amy and Leo each have their own bag of sweets containing raspberry and liquorice sweets. The two types are mixed in the bags. (0/1/1)

Simon wants a piece of liquorice.

He is only allowed to take from **one** of the bags, without looking.

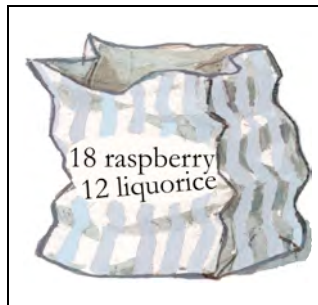
Which bag should he choose if he wants the biggest chance of getting a piece of liquorice?

*Circle and explain your answer.*

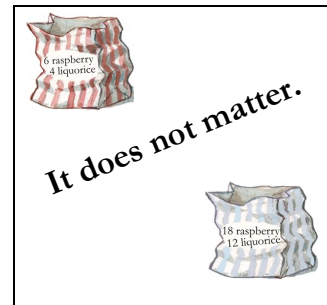
**Option 1**



**Option 2**



**Option 3**



*Explain your answer.*



33. A kangaroo is fast. In one hour it can jump 54 km.  
If a kangaroo jumps at the same speed all the time,  
how far will it get in 7 minutes?  
*Show your working.*



(0/2/1)

34. Leo buys three different t-shirts in a shop.  
He gets a discount and only pays 15 AUD  
for all three t-shirts.  
What per cent discount does he get?  
*Show your working.*



(0/1/2)





