

Mathematics

Delprov B

Årskurs

9

Elevens namn och klass/grupp

Instructions

This part consists of tasks to be solved without a calculator and formula sheet. For a couple of the tasks you have to show your solution and for the other tasks you only have to write the answer.

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

Time for the part: 80 minutes for Part B and Part C together. We recommend that you use no more than 40 minutes for work on Part B. You are not allowed to use a calculator until you have handed in Part B.

Write your answers in the student booklet.

You can save time by doing mental arithmetic as much as possible.

Name: _____

School: _____ Class: _____

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

Girl Boy

Good luck!

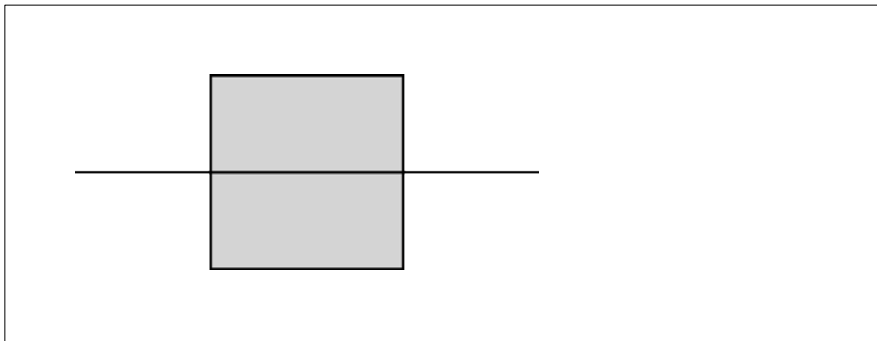
Illustrations: Jens Ahlbom

1. A refrigerator stores food at around $+5\text{ }^{\circ}\text{C}$ and a freezer at around $-18\text{ }^{\circ}\text{C}$. How great is the difference in temperature?



Answer: _____ $^{\circ}\text{C}$ (1/0/0)

2. One line of symmetry has been drawn in the square. Draw the square's other lines of symmetry. (2/0/0)



3. Calculate the value of the expression

$$m + \frac{1}{m} \text{ where } m = 4$$

Answer: _____ (1/0/0)

4. Which of the following calculations results in an answer that is just over 30? Circle your answer.

$$\frac{30}{0.97}$$

$$\frac{30}{0.097}$$

$$30 \cdot 0.97$$

$$30 \cdot 0.097$$

(1/0/0)

5. Calculate $3^2 + 2^3$

Answer: _____ (1/0/0)

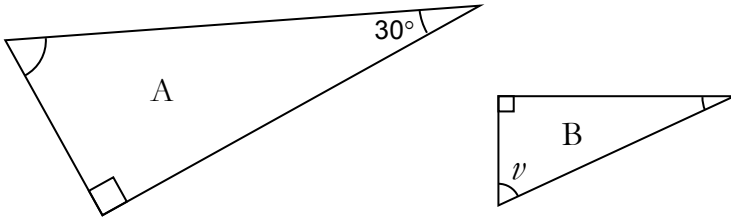
6. Calculate $\frac{3}{\frac{1}{2}}$

Answer: _____ (1/0/0)

7. Solve the equation $25 - 5x = 10$

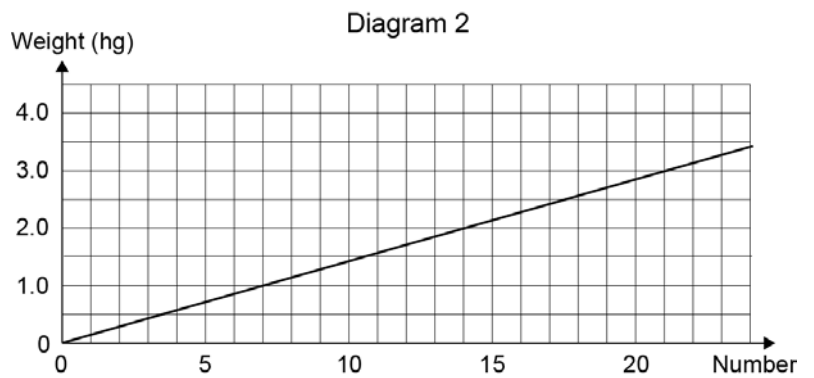
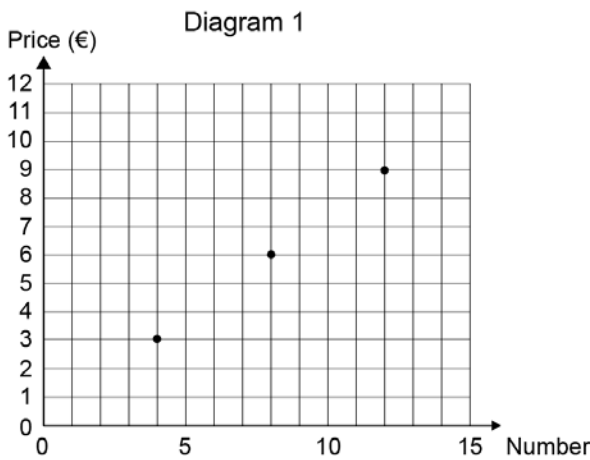
Answer: $x =$ _____ (1/0/0)

8. The triangles A and B are similar.
How many degrees is the angle ν ?



Answer: $\nu =$ _____ $^\circ$ (1/0/0)

9. A shop in Germany sells chocolates that are priced individually. Diagram 1 shows the price in euros (€) for some different quantities of chocolates. Diagram 2 shows the weight of different quantities of chocolates.



Answer the following questions with the help of the diagrams.

- a) How much do four chocolates cost? Answer: _____ € (1/0/0)
- b) How many chocolates do you get if you buy 3 hg? Answer: _____ pieces (1/0/0)
- c) You want to buy 2 hg of chocolates.
How much does that cost? Answer: _____ € (0/1/0)

10. The mean value of five integers is 7.
The median is 9. Give a suggestion
as to what the five numbers might be. Answer: _____ (1/1/0)

11. Simplify the expression $xy + xy + xy$
Circle your answer.
 $x^3 + y^3$ xy^3 $x^3 y$ $3xy$ $3x + 3y$ $(xy)^3$ (0/1/0)

12. Give a number that is greater than $2.5 \cdot 10^{-3}$
but smaller than $2.5 \cdot 10^{-2}$ Answer: _____ (0/2/0)

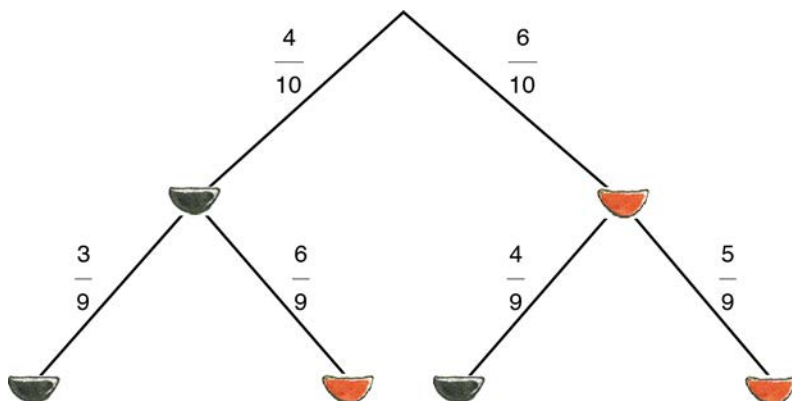
13. A bowl of sweets contains 6 raspberry boats
and 4 liquorice boats. You may, if you wish,
use the tree diagram to help you solve the problems.



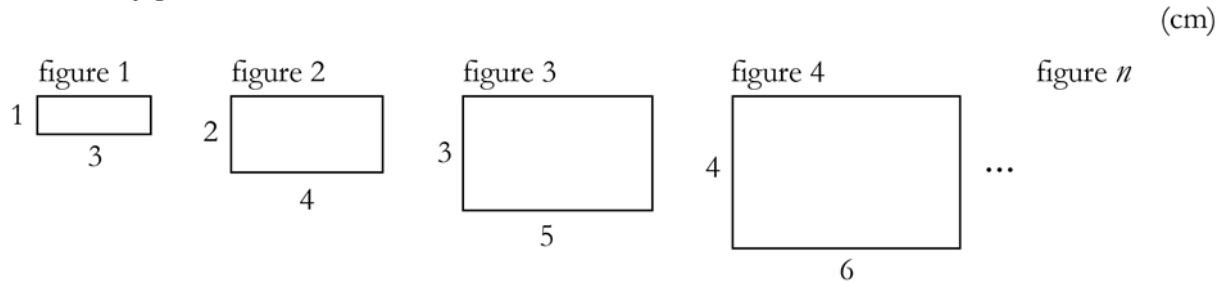
- a) You take *one* sweet without looking. What is
the probability that you will get a liquorice boat? Answer: _____ (1/0/0)
- b) You take *two* sweets without looking.
What is the probability that you will get two raspberry boats?

Show your calculations here.

Answer: _____ (0/1/1)



14. Below are the first four figures in a series.
Write an expression for the area of figure n .
The figures have not been drawn to scale.

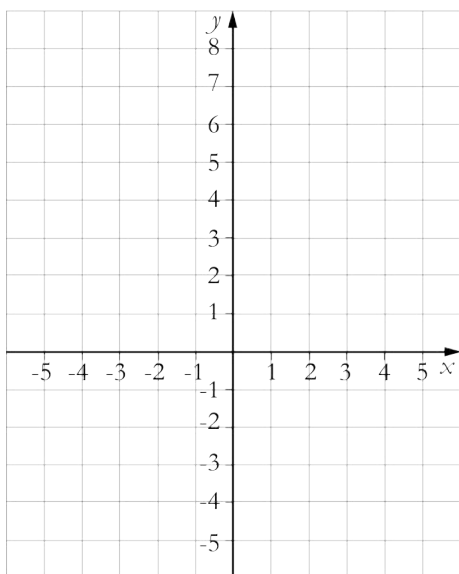


Answer: _____ cm² (0/0/2)

15. $A = (2, 1)$, $B = (-3, 4)$, $C = (1, -3)$
are three points in a coordinate system.

- a) Draw the points A, B and C in the coordinate system. (1/0/0)
- b) Form a parallelogram there the points A, B and C are three of the corners.
Which points are possible for the corner D? Draw in the points and give
the coordinates.

Show your calculations in the box.



Answer: _____ (0/2/1)

