Mathematics

Delprov B

1a

Skolverket

Instructions – Part B

Time for the test   60 minutes for Part B.

Aids   Allowed aids on Part B are formula sheet and ruler.

Tasks   This part consists of tasks to be solved without using digital devices. Answers and solutions are to be written in the test booklet. Some of the tasks require working, which is to be shown in the figure and the box next to the task. For the other tasks only the answer is required. The maximum number of points that you can get for your answer/solution is shown after each task.

Grading limits   The test (Part A–D) gives a total maximum of 79 points.

Limit for test grade
E: At least 19 points.
D: At least 33 points of which at least 11 points at level C or higher.
C: At least 43 points of which at least 19 points at level C or higher.
B: At least 53 points of which at least 4 points at level A.
A: At least 62 points of which at least 8 points at level A.

Name: _____

Date of birth:_____

Programme:_____ Class: _____

Illustration: Jens Ahlbom

1. Which of the following numbers is the best approximation of 6.35 × 3.2? Circle your answer.

   0.203   2.03   20.3   203   2030   (1/0/0)

2. A formula for calculating VAT has been entered in a spreadsheet. What will the price be including VAT?
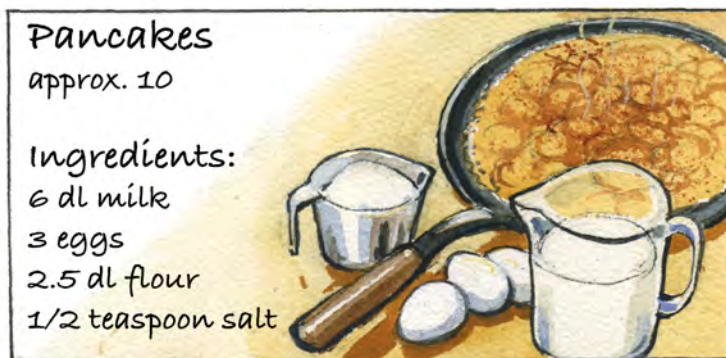
	A	B
1	Price without VAT	800
2	Price with VAT	=1.25*B1

   Answer:_____ SEK (2/0/0)

3. Write the number 20 as a product of two negative numbers.

   Answer:_____ (1/0/0)

4.

   Pancakes
   approx. 10

   Ingredients:
   6 dl milk
   3 eggs
   2.5 dl flour
   1/2 teaspoon salt

   Daniel has only two eggs. How much *milk* will be needed according to the recipe if he's going to make pancakes with two eggs?

   Answer:_____ dl (1/0/0)

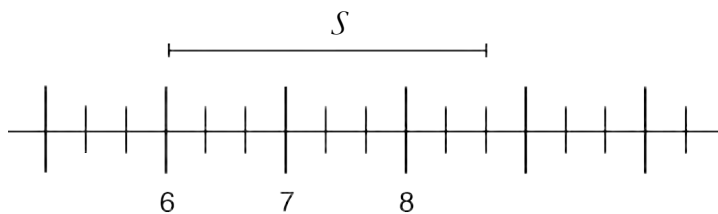**5.** Which number is to be in the box for equality to be valid?

$42 - 15 = \boxed{} - 17$ Answer:_____ (1/0/0)

6. You know that $\dfrac{1980}{24} = 82.5$. What is $\dfrac{1980}{2.4}$?   Answer:_____ (1/0/0)
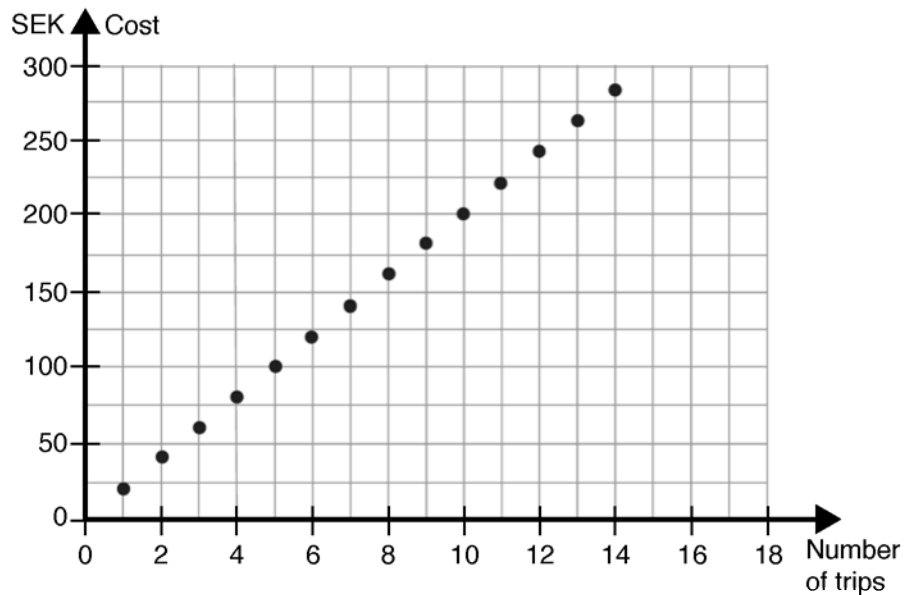
7. How long is the distance S in the given scale?

Answer:_____ length units (1/0/0)

8. Solve the equation $15.8 = 2x - 7.2$
Show your solution.

Answer: $x =$_____ (2/0/0)

9. Elin has started in a new school and has to go to and from school by bus every day. The diagram shows the cost of single trips, i.e. for a trip to or from school.

a) A monthly bus pass costs SEK 230. What is the *minimum* number of single trips Elin has to make in order for it to be cheaper for her to buy a monthly bus pass?

Answer:_____ (1/0/0)

b) What does a single trip cost according to the diagram?
Motivate your answer.

Answer: SEK _____ (1/1/0)

10. The original price of a product is SEK 2 000. The product's value increases by 5 % per year. y is the product's price and x is the number of years after the purchase. Which of the following relations describes the price development?
Circle your answer.

$$y = 1.05 \times x + 2000 \qquad y = 2000 \times 1.05^x$$

$$y = 2000 \times 0.95^x \qquad y = 2000 \times 1.05x \qquad y = 2000(x + 5) \qquad \text{(0/1/0)}$$

11. Simplify the expression $3(x + 5) - (x + 1)$
as far as possible. Answer:_____ (0/1/0)

12. What number is exactly half way between 10^2 and 10^4? Answer:_____ (0/1/0)

13. When Pelle received a 1.5 % salary increase, it amounted to SEK 300. How many SEK would he have received as a salary increase if the increase had been 4 %? Answer: SEK_____ (0/2/0)

14. What expression(s) are greater than 2 per mille?
Circle your answer(s).

$\dfrac{2}{2\,000}$ 0.00201 $\dfrac{1}{499}$ $\dfrac{1}{501}$ 1.9×10^{-3} (0/1/1)

15. $A = \dfrac{B}{B+1}$ where B is a positive number.

Will A be greater or smaller if B is doubled?
Motivate your answer.

Answer:_____ (1/1/1)

Compilation of student results

National test in mathematics 1a, autumn 2016

Name:	Test grade:

	E-points		C-points		A-points		Total	
	Your score	Maximum score	Your score	Maximum score	Your score	Maximum score	Your score	Maximum score
Part A		3		4		4		11
Part B		13		8		2		23
Part C		3		5		3		11
Part D		13		15		6		34
Total		**32**		**32**		**15**		**79**

Part A	E	C	A	Score	Comment
Method and carrying through	+E	+C	+A		
Presentation	+E +E	+C +C +C	+A +A +A		
Total	3	4	4		

Part C	E	C	A	Score	Comment
Method and carrying through	+E +E +E	+C +C	+A		
Presentation		+C +C	+A +A		
Total	3	5	3		

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Test grade

The test grade sums up the knowledge that the student has shown on the national test. The course grade does not have to be the same as the test grade since the course grade is based on all the knowledge that the student has shown during the course.

Comments:

PRIM
gruppen