

MATHEMATICS TEST

Year 9 – Part A

Name _____

School _____ Class _____

Date of Birth Year _____ Month _____ Day _____

Girl ☐ Boy ☐

Answer only required.

To save time use mental arithmetic as much as possible.

1. Write *one million* thousand in figures.

Answer: _____

2. _____ =

Answer: _____

3. _____ $\cdot 0.1 =$

Answer: _____

4. Circle the smallest fraction.

$$\frac{2}{3}$$

$$\frac{1}{3}$$

$$\frac{3}{3}$$

$$\frac{2}{9}$$

$$\frac{1}{2}$$

5. Give a number that is greater than
but less than

Answer: _____

6. _____ =

Answer: _____

7. Circle the smallest number.

70 10 40 -5

8. _____ - 0.5 =

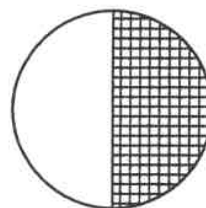
Answer: _____

9. $\frac{\text{ }{\text{ }}}{0.1} =$

Answer: _____

10. Shade $\frac{\text{ }{\text{ }}}{\text{ }}$ of the *white* area in the figure.

What area of the *total* circle have you shaded in?



Answer: _____

11. A train to Stockholm leaves Malmö
at _____ o'clock and the journey is
estimated to take 5 hours and 50 minutes.

What time will the train arrive in Stockholm? Answer: _____

12. _____ + _____ =

Answer: _____

13. During one day in April the highest
temperature in Kallinge was _____ °C
and the lowest was _____ °C.

What was the temperature range? Answer: _____ °C

14.



How much would a bag of prawns cost that weighs

a) 1.5 kg?

Answer: _____ kr

b) 750 g?

Answer: _____ kr

15. What is _____ % of 50 kr?

Answer: _____ kr

16. What is half of _____ ?

Write your answer as a fraction.

Answer: _____

17. Write *negative numbers* in brackets in order to obtain correct answers.

a) () + () = -12

b) () - () = 4

18. 25 packets of biscuits weigh 3 kg. Work out what *one* packet weighs. Which calculation did you use? Circle your answer.

$25 \cdot 3$ $\frac{3}{25}$ $25 - 3$ $\frac{25}{3}$ $3 \cdot 25$ $3 + 25$

19. $\sqrt{100} =$

Answer: _____

20. You are given that $\frac{1}{a} =$

How much, therefore, is $\frac{1}{a^2}$?

Answer: _____

21. Which of the following calculations will give you the smallest number?
Circle your answer.

$28 - 0.89$

$28 - 0.895$

$28 - 0.9$

$28 - 0.8$

22. Which of the following sums is greater than 1? Circle your answer.

$\frac{1}{2} + \frac{1}{3}$

$\frac{2}{3} + \frac{1}{4}$

$\frac{4}{7} + \frac{1}{2}$

$\frac{3}{7} + \frac{2}{11}$

23. In a class, there are _____ girls and
_____ boys.

What percentage of the class is boys?

Answer: _____ %

24. $\frac{1}{a} \cdot \frac{1}{a^2} =$

Answer: _____

25. How do you write

a) half of a

Answer: _____

b) four more than a

Answer: _____

26. What value of x is $100 = 200 - x$

Answer: $x =$ _____

27. What value of a is $\frac{1}{a} =$

Answer: $a =$ _____

The Chocolate Wheel

A

Class 9 C at Lyckebo School plan to go on a school trip at the end of term. The class has worked out that the trip will cost 85 000 kronor. The students have 50 000 kronor in their class kitty. They need a further 35 000 kronor. The class has planned and has received permission to hold a "Fun-Fair Evening" in the school with live appearances, games, competitions, lotteries etc.

Some of the students have agreed to organise a chocolate wheel with boxes of chocolates as prizes. They have bought 200 boxes at 15 kronor each. The game will give 3 000 kronor to the class kitty.

Discuss several ways in which the game can be arranged.



Instructions

Working in pairs (approx. 25 min.)

Read carefully through the assignment and think about how you are going to solve it. Make notes. Then discuss the assignment together and see if you have understood it in the same way. Explain to each other how you are thinking. Try to express yourself so that your partner understands. Listen and ask questions, so that you understand your partner's thinking.

Working individually (approx. 25 min.)

After the discussion you will have to give an account on your own of a similar assignment.

The Chocolate Wheel

B

Class 9 C at Lyckebo School plan to go on a school trip at the end of term. The class has worked out that the trip will cost 85 000 kronor. The students have 50 000 kronor in their class kitty. They need a further 35 000 kronor. The class has planned and has received permission to hold a "Fun-Fair Evening" in the school with live appearances, games, competitions, lotteries etc.

Some of the students have agreed to organise a chocolate wheel with boxes of chocolates as prizes. They have bought 200 boxes at 15 kronor each. The game will give 3 000 kronor to the class kitty.

Show one way in which the game can be arranged.
Motive why you have chosen this method.

When assessing your work the teacher will take into account

- how you have carried out your calculations
- how well you have shown your workings and motivated your answer
- how suitable your answer is for the purpose.

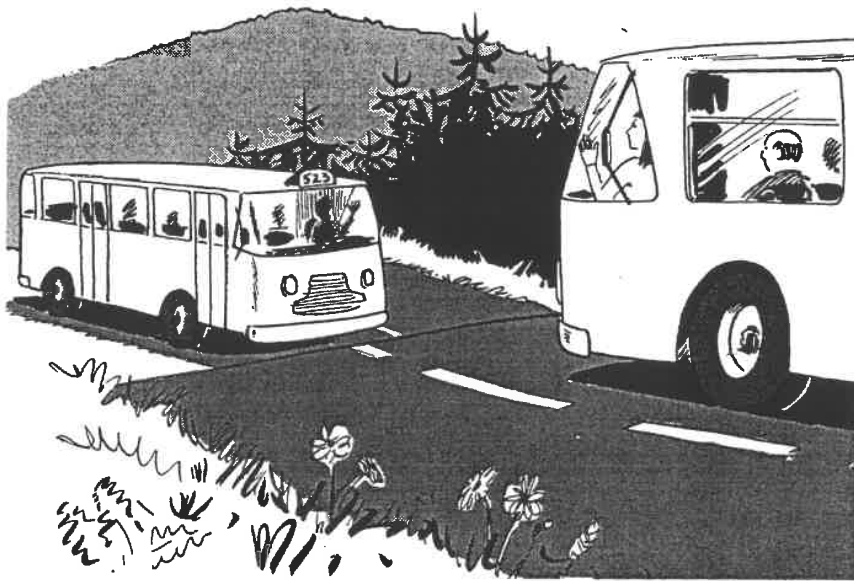


Bus Frequency

A

A bus goes between Aneby and Beneby every twenty minutes from 6 am until 10 pm. The journey between the two towns takes 50 minutes including stopping time at the various bus stops on the way. At each destination point the bus stops for a further 10 minutes before starting its next journey.

Lisa drives out her bus from Aneby at 7 am and Sluggo takes the next run from Aneby. Discuss how you can work out when and where they will meet each other.



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Bus Frequency

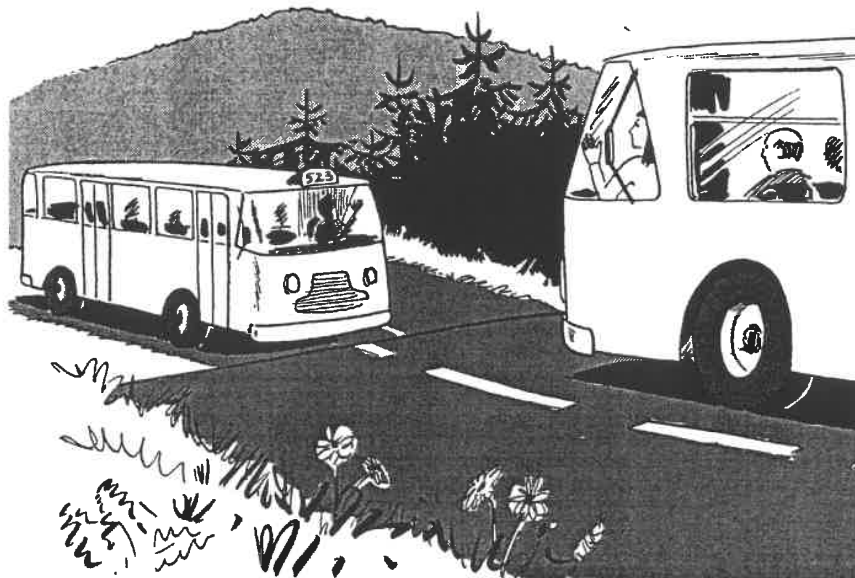
B

A bus goes between Aneby and Beneby every twenty minutes from 6 am until 10 pm. The journey between the two towns takes 50 minutes including stopping time at the various bus stops on the way. At each destination point the bus stops for a further 10 minutes before starting its next journey.

1. Andersson leaves with his bus from Aneby at 7 am. When should he arrive back in Aneby again?
2. How many busses are needed to keep the Aneby–Beneby route running?
3. How often will Andersson meet another bus on the same route?

When assessing your work the teacher will take into account

- how well you have shown your workings
- how you have arrived at your answer
- what conclusions you have made.



Bikes and Cars

A

1995 was a world record for the number of bikes – over one billion on the planet earth! The Chinese were naturally top of the bike league.

There are now 450 million bikes in China. Bikes in Asia transport more people than all the cars in the world. In Europe there are some 200 million bikes. Holland, Denmark and Germany are the countries in Europe where the bike is used most. In Sweden there are about 6 million bikes.

Bike density in various countries

Country	Number of people per bike
Holland	1.2
Denmark	1.3
Germany	1.4
Sweden	1.5
China	2.6



By the end of the 60s the world was manufacturing 23 million cars every year. Currently about 36 million cars are being made in a year. The number of cars made in 1995 was less than in 1989.

The manufacture of bikes has increased by 20 % since the beginning of the 90s. There are currently just over three times as many bikes as cars being manufactured in a year.

During 1995 there were approximately 120 000 bike thefts in Sweden.

Discuss which of the questions can be answered using the text and table.

If the question can be answered discuss how the calculations should be made in order to answer the question. If the question cannot be answered using the text and table you have to discuss why this is so.

- What percentage of the world's bikes are found in Sweden?
- About how many people live in Denmark?
- Are there more bikes in Sweden than in Denmark?
- Approximately how many bikes were manufactured each year at the beginning of the 90s?

Instructions

Working in pairs (approx. 25 min.)

Read carefully through the assignment and think about how you are going to solve it. Make notes. Then discuss the assignment together and see if you have understood it in the same way. Explain to each other how you are thinking. Try to express yourself so that your partner understands. Listen and ask questions, so that you understand your partner's thinking.

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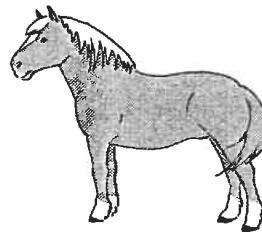
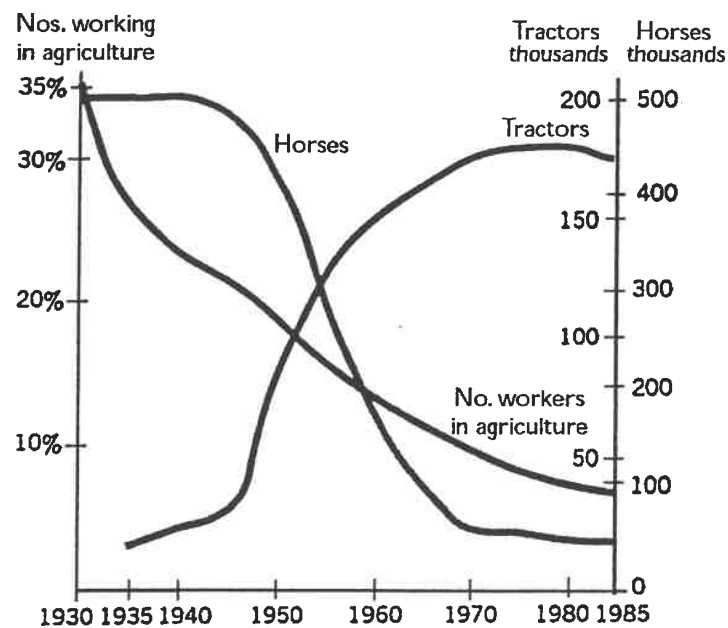
Answer the questions using the text and table. Show all your calculations and explain clearly how you have reached a conclusion.

- Are there twice as many bikes in China as in Denmark?
- About how many people live in China?
- What per cent, approximately, of the world's bikes are found in Europe?
- Approximately how many bikes were being manufactured each year at the beginning of the 90s?

Diagram

A

The diagram below shows the development of agriculture in Sweden for the period 1930–1985. Your assignment is to read the diagram, understand it and obtain as much relevant information as possible from it. Look at each curve individually, but at the same time try to see any relationships between the curves. You might, for example, make up questions for each other which can be answered using the diagram.



Instructions

Working in pairs (approx. 25 min.)

Read carefully through the assignment and think about how you are going to solve it. Make notes. Then discuss the assignment together and see if you have understood it in the same way. Explain to each other how you are thinking. Try to express yourself so that your partner understands. Listen and ask questions, so that you understand your partner's thinking.

Working individually (approx. 25 min.)

After the discussion you will have to give an account on your own of a similar assignment.

Diagram

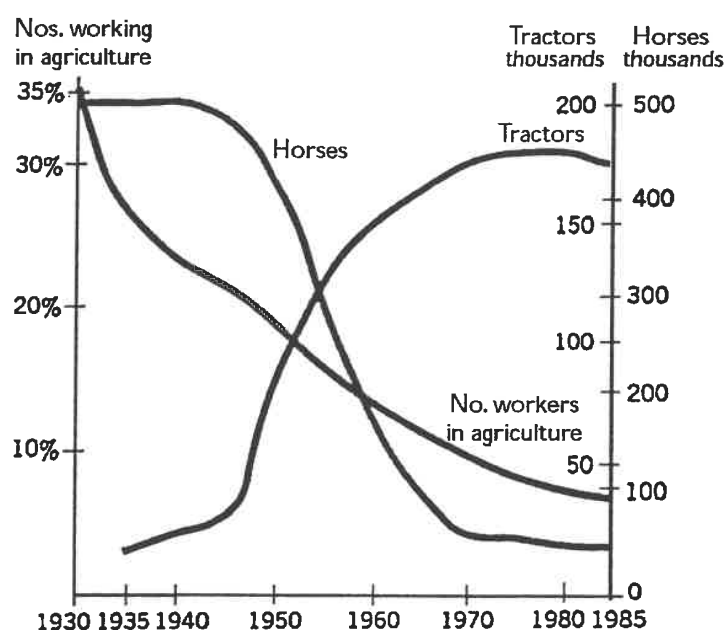
B

What does the diagram say?

Using the diagram you now have to write a *short* passage on the development of agriculture during the period 1930–1985.

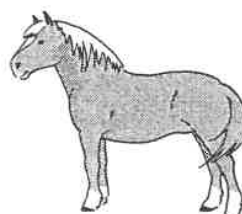
The passage should summarise the information you obtain from the diagram. Look at each curve individually and draw conclusions. You should also study the relationships between the curves.

Try to write in good English. The passage should include as much relevant information as possible.



When assessing your work the teacher will take into account

- how well you have interpreted and analysed the diagram
- how much of the diagram's information has been included in your passage
- how well you have shown your workings.



Mopeds

A

During the month of June 1997 about 10 000 Swedish teenagers had their 15th birthday and were therefore old enough to legally ride a moped. Imagine that you were one of them and that you planned to buy a moped. To save up for the moped and to have enough to keep it running you will be able to work in the family business.

- A secondhand moped and a helmet cost a total of 9 500 kronor.
- A third-party insurance costs 550 kronor per year.
- Petrol costs 8.50 kronor per litre.
- Service costs are 500 kronor per year.

Any loans or repayment details you can decide yourself. You should also decide how many kilometres you will drive.



Discuss the cost of buying and running the moped. Discuss the various ways in which you can obtain the money.

Instructions

Working in pairs (approx. 25 min.)

Read carefully through the assignment and think about how you are going to solve it. Make notes. Then discuss the assignment together and see if you have understood it in the same way.

Explain to each other how you are thinking. Try to express yourself so that your partner understands. Listen and ask questions, so that you understand your partner's thinking.

Working individually (approx. 25 min.)

After the discussion you will have to give an account on your own of a similar assignment.

Mopeds

B

During the month of June 1997 about 10 000 Swedish teenagers had their 15th birthday and were therefore old enough to legally ride a moped. Imagine that you were one of them and that you planned to buy a moped. To save up for the moped and to have enough to keep it running you will be able to work in the family business. You will get 50 kronor per hour for this work.

Make a suitable calculation, which will show how much you will need to work in order to buy the moped and keep it on the road for three years. Assume that you will be able to sell the moped for half its purchase price in the year 2000.

Any loans or repayment details you can decide yourself. You should also decide how many kilometres you will drive.

The following costs and details apply:

- A secondhand moped and a helmet cost a total of 9 500 kronor.
- A third-party insurance costs 550 kronor per year.
- Petrol costs 8.50 kronor per litre.
- Service costs are 500 kronor per year.

Show accurately how you would finance your moped.



When assessing your work the teacher will take into account

- how well you have shown your workings
- how you have calculated
 - outgoings in connection with the purchase and running costs
 - any loan and when repayments are to be made
 - how much you have worked to finance the purchase of the moped.