

Tasks T1 – T8 carry 3 points each

**T1. Beavers eating twigs**

3 beavers eat 3 twigs of aspen in 3 minutes.



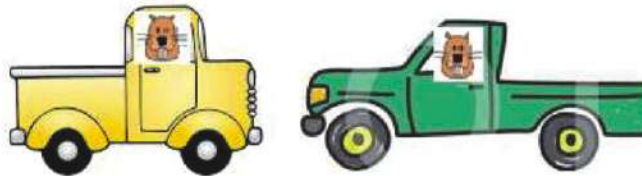
**Question/Challenge:**

In how many minutes do 100 beavers eat 100 twigs?

- A) 100                      B) 30                      C) 4                      D) 3

**T2. Two types of trucks**

Bebras' company has two types of trucks: Type 1 trucks that can carry 3 tons of cargo a day, and Type 2 trucks that can carry 5 tons of cargo a day.



**Question/Challenge:**

Knowing that Bebras' firm has 4 Type 1 and 2 Type 2 trucks, how many tons of freight can the company's trucks transport in 5 days?

- A) 100                      B) 110                      C) 120                      D) 130

**T3. Robots**



Here are five statements describing the three robots above:

1. Bob and Moe are smiling.
2. Bob, Moe and Lea each have two legs.
3. Moe has a round head and Lea has two legs.
4. All three robots have five fingers.
5. Lea or Bob have their hands raised.

**Question/Challenge:**

Which of these five statements are true?

- A) 2 and 3                      B) 1 and 3                      C) 1 and 5                      D) None

**T4. Clock**

Beaver's clock shows 4:07. Beaver wonders what the clock will look like in 90 minutes.



**Question/Challenge:**

Can you help him?

- A) 4:37                      B) 5:17                      C) 5:27                      D) 5:37

**T5. Queue in a shop**

Ben and his brother are in line at the store to buy their candies. Ben is in front of his brother in the queue, and there are two people between them. Ben noticed that in total, there were 3 people in front of him, and the brother noticed that there was a person behind him.

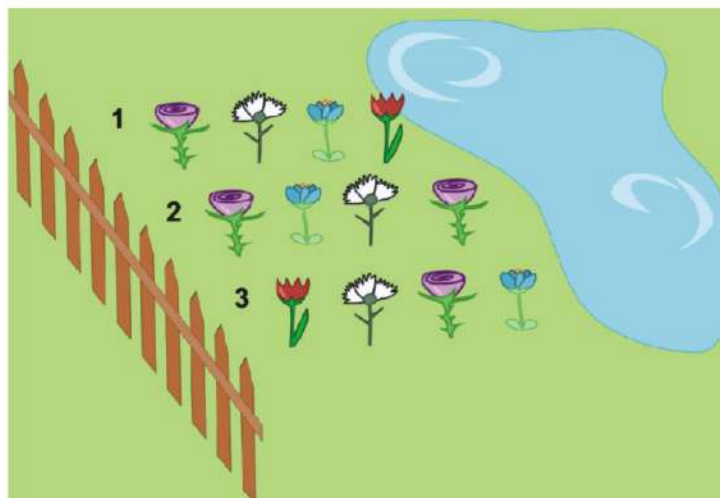
**Question/Challenge:**



How many people are there in the line?

- A) 6                      B) 7                      C) 8                      D) 9

**T6. Flowerbed**

Children planted some flowers in three rows, 4 flowers in each row.



Mother wished that in each row the white flower  is closer to the fence than the blue flower .

**Question/Challenge:**

Which rows are planted according to mother's wish?

- A) Only 1                      B) 1 and 2                      C) 1 and 3                      D) All

**T7. Mary chooses a number**

Mary chooses a number. Anna adds 1 to Mary's number and multiplies the two numbers, obtaining the value 12.

**Question/Challenge:**

What was the number chosen by Mary?

- A) 3                              B) 4                              C) 5                              D) 6

**T8. Notebook with numbers**

Beaver found some old notebook in the lawn near his house. Number 1 is written on the first page of the notebook, numbers 2 and 3 on the second page, on the third page numbers 4, 5 and 6, on the fourth page numbers 7, 8, 9 and 10, and so on. Beaver wonders, on what page of the notebook he will find number 27.

**Question/Challenge:**

Help Beaver to find the answer to this question.

- A) 5                              B) 6                              C) 7                              D) 8

**Tasks T9 – T16 carry 4 points each**

**T9. Time in minutes**

Beaver is sometimes weird. He likes to express time only in minutes. For example, if you ask him what time it is, he will answer how many minutes have elapsed since midnight that day.

**Question/Challenge:**

If he suggests to his friend to meet at the 645th minute, what is the real time his friend needs to be there?

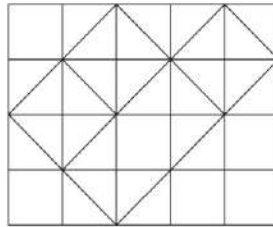
- A) 10:30                      B) 10:45                      C) 11:00                      D) 11:15

**T10. Diagonals and squares**

A rectangle in the picture below is divided into 20 squares with sides equal to 1 unit. In some of these squares a diagonal is drawn from the top right corner to the lower left corner or from the top left corner to the lower right corner.

**Question/Challenge:**

How many squares do these diagonals form?



- A) 3                      B) 4                      C) 5                      D) 6

**T11. Similar dishes**

Chef wants to prepare 2 dishes for dinner. He does not want them to be similar. Two dishes are called similar if at least 2 of ingredients are the same.

Pasta	Egg salad	Walnut salad	Chicken soup	Cake

**Question/Challenge:**

Which dishes are similar?

- A) Chicken soup and Pasta                      B) Chicken soup and Walnut salad  
 C) Chicken soup and Egg salad                      D) Walnut salad and Cake

**T12. Chip and Beaver**

Chip squirrel is a neighbor and a good friend of Beaver. She has four houses on which she puts plates with numbers in ascending order from 1 to 4. Beaver is playful and one day he moves the plates around and now they are in the following order 3, 2, 4, 1.

**Question/Challenge:**

How many plates have been moved?

- A) 1                      B) 2                      C) 3                      D) 4

**T13. Anagrams**

Letters *d, e, f, i, n* and *r* can be arranged so as to form words, not necessarily meaningful, such as *finder, redfin* or *refind*. These words are called anagrams.

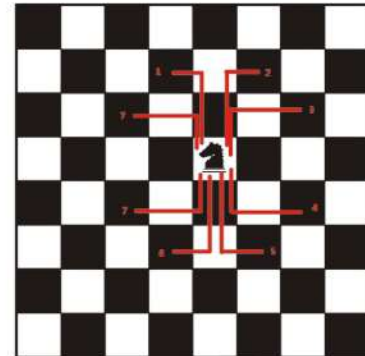
**Question/Challenge:**

Which of the following words ARE NOT anagrams to the words above?

- A) friend                      B) rifend                      C) fendir                      D) difere

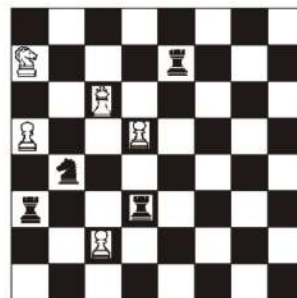
**T14. Playing chess**

On the chessboard, the knight can move in 8 directions, in the form of the letter L: two boxes up and a box to the right, two boxes up and a box to the left, or a box up and two boxes to the right and so on, as in the picture.



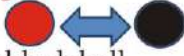
**Question/Challenge:**

How many white pieces can be attacked by the black knight on the chess board below?



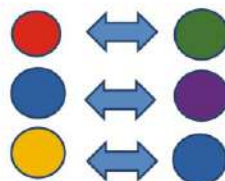
- A) 2                              B) 3                              C) 4                              D) 5

**T15. Colourful balls**

The operation  means changing the position of the red ball with the position of the black ball.






If we have a row of colored balls and then the sequence of operations



**Question/Challenge:**

Which will be the balls configuration at the end of the operations?

- A)                       B)   
C)                       D) 

**T16. Number table**

Consider a large square divided into  $n \times n$  identical squares. The square has therefore  $n$  rows and  $n$  columns (numbered from 1 to  $n$ ), and in each square a natural number between 1 and  $n \times n$  is placed, as in the example below, where  $n = 3$ :

	1	2	3
1	1	2	3
2	4	5	6
3	7	8	9

**Question/Challenge:**

On which row and which column is the number 12, in a similarly constructed square in which  $n = 4$ ?

- A) 3 and 4                      B) 3 and 3                      C) 4 and 3                      D) 4 and 4

**Tasks T17 – T24 carry 5 points each**

**T17. Perfect square**

A number is a perfect square if you can write it as a product of two identical natural numbers.

**Question/Challenge:**

How many of the numbers 1, 35, 15, 64, 49, 55 are perfect squares?

- A) 3                                  B) 4                                  C) 5                                  D) 6

**T18. Circle with numbers**

Numbers 1 to 10 are placed in ascending order on the circumference of a circle. Starting with number 1, every other number is deleted from the circle. After each elimination the circle is narrowed.

**Question/Challenge:**

What number will be the last one remaining?

- A) 2                                  B) 4                                  C) 6                                  D) 8

**T19. Magic square**

A  $5 \times 5$  magical square consists of natural numbers from 1 to 25 having the property that the sums on each row, column, and diagonal are equal. There are some missing numbers in this magic square.

**Question/Challenge:**

What is the missing number in the third row?

- A) 3                                  B) 5  
C) 21                                D) 25

9		22	16	15
2		20	14	8
?	19	13	7	1
18	12	6		24
11	10	4	23	

**T20. Poplars on the alley**

In the alley in front of Beaver's house there are 5 poplars of different heights: 5, 7, 3, 6 and 4. For the sake of beauty, Beaver wants the poplars to have their heights in descending order. For this, it is possible to shorten the poplars and the poplars can not be lengthened.

**Question/Challenge:**

What is the minimum number of poplars which will be shortened?

- A) 1                      B) 2                      C) 3                      D) 4

**T21. Triangle of numbers**

Look at the following triangle of numbers:

```

1
2 1
1 2 3
4 3 2 1

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**Question/Challenge:**

If we extend the triangle with two more lines, which is the third number on line 6?

- A) 3                      B) 4                      C) 5                      D) 6

**T22. Educating the Beaver**

Beaver is somewhat disorganized and sometimes likes to lie. To make him more responsible, his mother made him look after her movie tickets. When she asks him where he put the tickets, Beaver says that between the pages numbered  $x$  and  $y$  of a story book.

**Question/Challenge:**

Which of the pairs of numbers can be correct values for  $x$  and  $y$ , so that Beaver can not be caught with the lie?

- A) 1 and 2              B) 2 and 3              C) 3 and 4              D) 5 and 6

**T23. Even and odd digits**

A number is called  $XY$  if its first digit is  $X$  and the second is  $Y$ . For example, 25 is such a number where  $X = 2$ ,  $Y = 5$ .

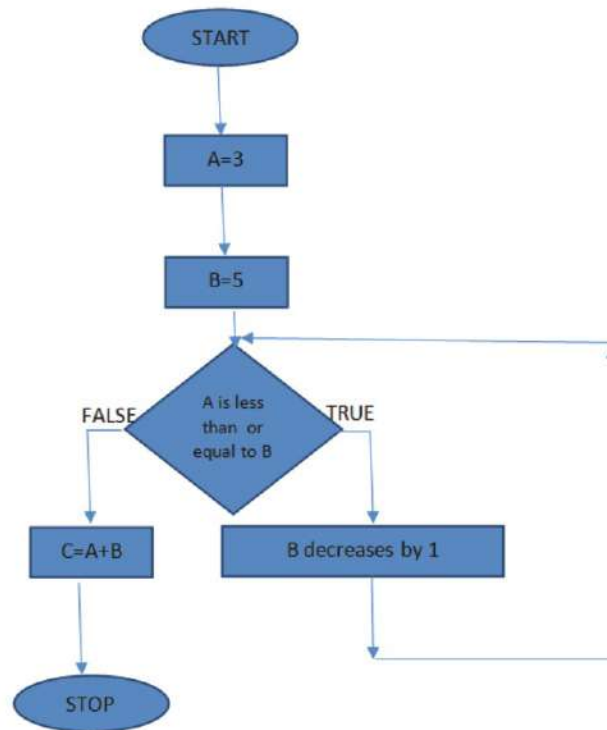
**Question/Challenge:**

How many  $XY$  numbers exist, if  $X$  is a non-zero even number, and  $Y$  is an odd digit?

- A) 10                      B) 20                      C) 30                      D) 40

T24. Flow diagram

Using the following diagram, start from the START block and follow the arrows.



Question/Challenge:

What will be the value of C when you reach the STOP block?

- A) 5                                      B) 2                                      C) 8                                      D) 6

