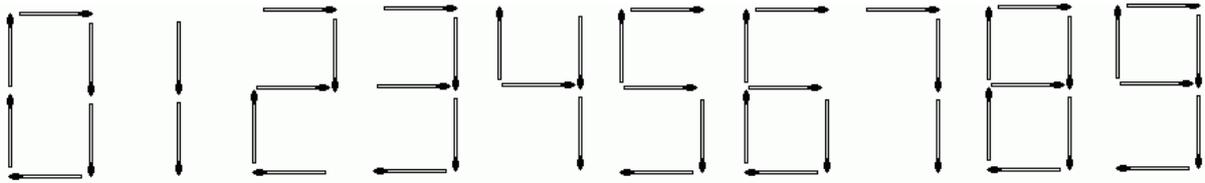# Admission test samples

General aptitude test

Aptitude test - Mathematics

1. What is the biggest double-digit number that you can create using exactly 12 matchsticks?

   0 1 2 3 4 5 6 7 8 9

   Answer:

2. Using matchsticks, we created the following sequence:

   $$1, 7, 4, 2, 0, ?, 10, 18$$

   Which number will take place of the question mark?

   Answer:

3. Handlová town square has a unique binary clock. However, the town inhabitants often found this clock rather puzzling so the town representatives published this explanation on their web page:

   32
   +
   16
   +
   8
   +
   4
   +
   2
   +
   1
   =
   hodiny : minúty : sekundy
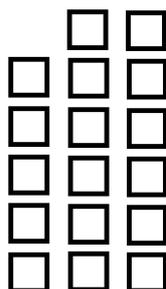
   Príklady:

   1 : 4 : 8   14 : 24 : 4

   Source: www.handlova.eu

   Draw the marking of the clock shown at 17:30:00.

   Answer:

6. John came across a riddle concerning an hourglass. This is how it went:

You have two hourglasses. One can accurately measure the 5-minute time slot, the other the 7-minute time slot. How can you measure an exact 11-minute time slot using these two hourglasses?

- *You can turn both hourglasses repeatedly without any time-loss*
- *You can stop the hourglass by laying it on its side*

After a bit of thinking, John suggested the following:

1) You start the both clocks simultaneously.
2) When sand in the 5-minute hourglass has all gone to the lower chamber, you turn this over but leave the 7-minute one go.
3) When the 7-minute hourglass is done you turn both hourglasses.
4) _____

Finish the last step in John's solution.

7. The order of sentences in the following text has been shattered.

S1: This reason does not give a full explanation but was enough for us to keep calm.
S2: Unsuccessfully.
S3: At the moment comes an announcement: *Your flight LH 1234 has a 3-hour delay.*
S4: Another time we heard an announcement: *Due to operational reasons your flight LH 5678 has a 3-hour delay.*
S5: Frankfurt Airport, the boarding of the aircraft was postponed.
S6: Immediately I went to the lady at the entrance to ask about the cause.
S7: That made me angry: „It is unbelievable to let us wait without any explanation!"

When put into a meaningful order, which sentence is going to be the penultimate (one before the last)?

A. Sentence S1.
B. Sentence S2.
C. Sentence S3.
D. Sentence S4.

Open Questions

1. Many flowers are typical for their various symmetries. There are, of course, deviations in colour or shape of the petals but we can claim that many are the shapes with axis or central symmetry, or even rotational symmetry.

   In the pictures below, you can see four flowers. Choose one with the highest number of axis of symmetry.

   What angle do the individual petals of this flower make?

2. The Plum family own a garden with a square ground plan 9m x 9m. 5/6 of this area is the lawn. The flowerbed that borders the lawn from two sides is 0.5m wide. There are also two trees in the garden. Each is divided from the lawn by a ring of gravel and bark chippings

   How much of a garden area is reserved for the trees?
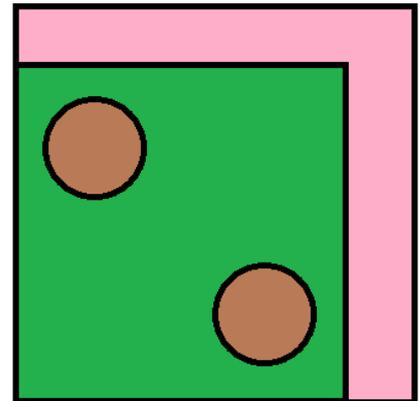
Multiple choice questions

6. Out of given possibilities, choose two are in continued proportion.
   A. the age and height of a person
   B. the number of musicians and the length of the composition they are playing
   C. the number of employees and the amount of money intended for salaries
   D. the speed of the car and the time in which it covers 100km

7. Which integer we have to insert in the place of tens in the four-digit number 15_5, if we want to get the number divisible by 15?
   A. 2
   B. 3
   C. 4
   D. 5

8. Which expression for x= -1 and for y=4 has value 10?
   A. $4y + 2x$
   B. $5(y - x)$
   C. $5y/2x$
   D. $6x - 4y$

9. The degrees of the angles in the triangle are in ratio $\alpha:\beta:\gamma =$ $2:4:3$. Determine the degree of an unknown angle x.
   A. 10°
   B. 20°
   C. 40°
   D. 55°
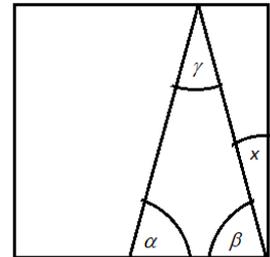
The image is for illustration purpose only.

10. We know that A is an integer bigger than -2 and smaller than 7, i.e. $-2 < A < 7$.
    We know that B is an integer bigger than -8 and smaller than 5, i.e. $-8 < B < 5$.
    We know that C is a difference of A and B, C=A-B.
    Choose the correct statement about C:

    A. $-2 < C < 2$
    B. $-7 < C < 15$
    C. $-15 < C < 7$
    D. $-10 < C < 12$