Co-funded by the
Erasmus+ Programme
of the European Union

MATH FOR DAILY LIFE

2017-1-IT02-KA219-036781-1

MATH FOR DAILY LIFE

Actions aimed at introducing students to mathematics

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Page layout and design: Lorena Mihelač

Date: October 2019

Print: Print on request

Published by: Šolski center Novo mesto, Novo mesto, Slovenia

CIP - Katapožni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

51-8

MATH for daily life : [actions aimed at introducing students to mathematics] / [authors Simona Pustavrh ... [et al.] ; editor Lorena Mihelač]. - Novo mesto : Šolski center, 2019

ISBN 978-961-6496-66-7
1. Pustavrh, Simona 2. Mihelač, Lorena
COBISS.SI-ID 302284288

EDITOR'S FOREWORD

This textbook has been created by math teachers involved in the project Erasmus+ KA2 “Math for daily life”. It consists of the most important information about the partners, their origin countries and math tasks, which were used in the mobilities of students and teachers.

The math tasks are not too difficult as they are written in such manner that they can be solved by a student involved in a general secondary school and vocational secondary school as well.

Math is a “life skill” – this is something that should be remembered. Curriculums worldwide have lost touch with everyday life and failed to rouse interest among students as a result. Students should use math skills – in each situation, otherwise it is just a set of facts, techniques, algorithms and methods.

Partners, involved in this project are aware about this problem, and have tried to take a different approach toward learning math, trying to use math in in real life situations.

We hope that this textbook will be a contribution toward a new understanding of math, and that the school curriculums in the future will be reformed in such manner, that the teachers can present the subject in *context*, which makes sense to students in which they will be able to use in their lives.

Dr. Lorena Mihelač

Šolski center Novo mesto, Novo mesto

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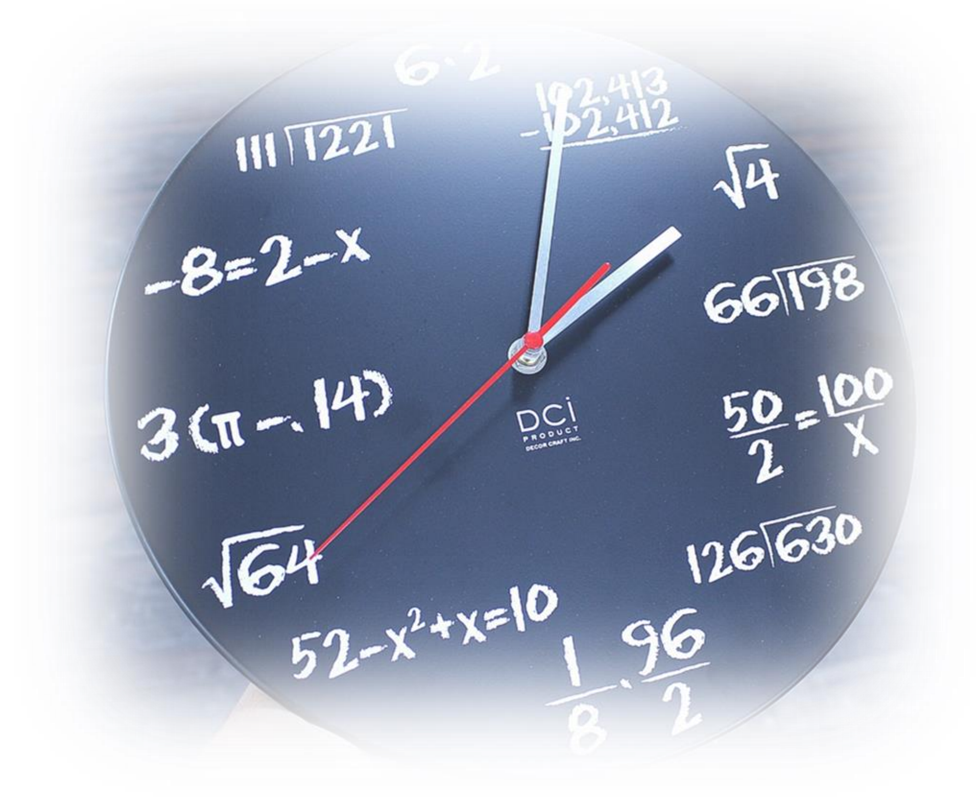
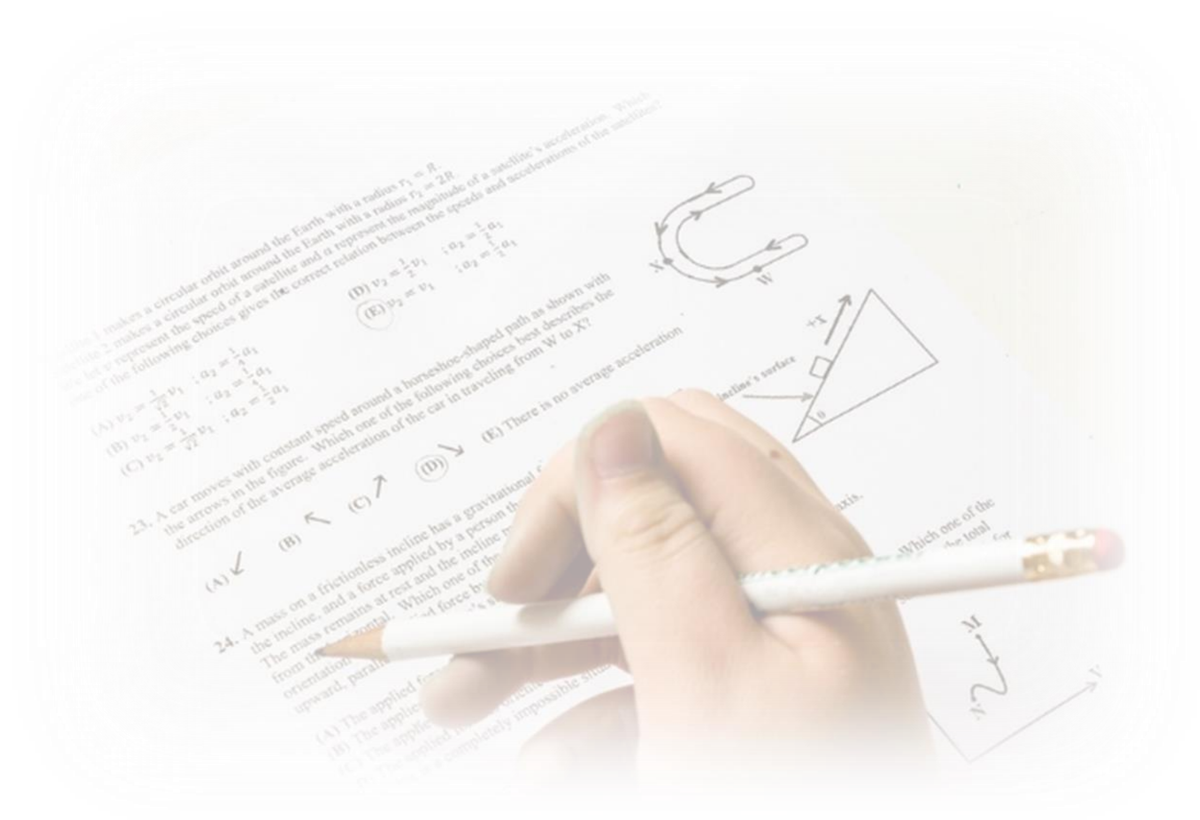

102,413
-102,412
111|1221
√4
-8=2-x
66|198
3(π-.14)
50/2=100/x
√64
126|630
52-x²+x=10
1/8 · 96/2
DCi
PRODUCT

"Mathematics is an everyday way of life. Shapes, sizes, lengths, distances, prizes and many more are things we contend with daily. How can we then hate mathematics? It widens our horizon and sharpens our logical thinking. When you think math, you think right"



PARTNERS

✓ **ITALY – Polotecnico Fermi – Gadda**

✓ **LATVIA - Ventspils Valsts 1 gimnāzija**

✓ **SLOVENIA - Šolski center Novo mesto**

PROJECT GOALS

- ✓ improving teaching and learning of mathematics within the partner schools;
- ✓ increasing students' inclusion and motivation;
- ✓ counteracting the belief that studying is tedious and unnecessary, and coping with the phenomenon of early school leaving;
- ✓ increasing the number of students continuing their studies in STEM disciplines;
- ✓ favoring teachers' acquisition of a more engaging communication style;
- ✓ teaching mathematics using practical exercises and methods accessible to everyone;
- ✓ developing the learning of basic skills in conjunction with transversal skills and in the perspective of intercultural understanding;
- ✓ promoting the learning of foreign languages and participation in a wider European dimension.

EXAMPLES OF GOOD PRACTICE

How to cooperate in a project with different educational programs? This short textbook is an example of good cooperation where a common language has been found between four different partners from four different countries:

- ✓ Polotecnico Fermi-Gadda (Italy)
- ✓ Ventspils Valsts 1. Ģimnāzija (Latvia)
- ✓ Šolski center Novo mesto (Slovenia)

In following chapters, each school will present themselves, their country and their examples created within the agreed tasks during the two year of cooperation in this project.

The examples of good practices are organized as follows:

- ✓ Task (description)
- ✓ Lesson plan (example from each school)
- ✓ Implementation in curriculum

WHY TO COMBINE SCHOOLS WITH DIFFERENT PROGRAMS IN A PROJECT

When deciding who will take part in this project, the first idea was to include only schools with a similar program. As mathematics impact different areas in our life, the next step was to extend this idea and to include schools with the program which is close enough to give good examples and to contribute to the main idea of this project. We have seen after cooperating two years in this program that:

- ✓ Combining different partners with different school program adds value to the project
- ✓ Effective program engages people in responsible and challenging actions for the common good
- ✓ Effective program provides structured opportunities for people to reflect critically on their experience
- ✓ Effective program articulates clear learning goals for everyone involved in the project
- ✓ Effective program clarifies the responsibilities of each person (student) and organization involved in the project
- ✓ Effective program expects genuine, active, and sustained organizational commitment

- ✓ Effective program includes training, supervision, monitoring, support, recognition, and evaluation to meet all the learning goals and tasks defined within the two years of cooperation

Including students and teachers from different programs from different schools adds specific values:

- ✓ Students are more curious and motivated to learn
- ✓ Students strengthen their ethic of social, health and civic response
- ✓ Students feel more committed to addressing underlying problems behind agriculture issues
- ✓ Students understand problems in a more complex way and can imagine alternative solutions
- ✓ Students demonstrate more sensitivity to the environment and how decisions (individual and group) are affecting people's lives
- ✓ Teachers learn how to work more collaboratively on real problems
- ✓ Teachers learn that even small involvement and mentoring can make a difference and impact student's lives and their as well

ITALY IN NUMBERS

SURFACE AREA: 301,340 km^2

POPULATION: 60,550,075

FORESTS:92,970 km^2

COASTLINE: 7600 km^2

AGRICULTURAL LAND IN USE: 66,601,000 HA

WATERCOURSES: 31,479 km^2

SURFACE COVERED PROTECTED: 22%

KARST CAVES: OVER 30

INTERNATIONAL TELEPHONE CODE +39

SUMMA (LUCA PACIOLI) FIRST BOOK ON ALGEBRA 1494

LATVIA IN NUMBERS

SURFACE AREA: 64,559 km^2

POPULATION: 1,902,088

FORESTS: 33,560 km^2

COASTLINE: 531 km^2

AGRICULTURAL LAND IN USE: 1,2 MILLION HA

WATERCOURSES: 12,000 km^2

SURFACE COVERED PROTECTED: 12%

INTERNATIONAL TELEPHONE CODE +371

GEOMETRIC SHAPES – USE IN ANCIENT LATVIAN SIGNS

LATVIA'S INTERNET SPEEDS ARE AMONG THE FASTEST IN THE WORLD, AVERAGING 13.8 MB/S

SLOVENIA IN NUMBERS

SURFACE AREA: 20,273 km^2

POPULATION: 2,065 million

FORESTS: 10,000 km^2

COASTLINE: 46,6 km

WATERCOURSES: 26,000 km^2

KARST CAVES: OVER 100, THE FAMOUST ONE POSTONJSKA JAMA

INTERNATIONAL TELEPHONE CODE +386

TABULA LOGARITHOMORUM VULGARIUM (JURIJ VEGA) 1797

HERMAN OF CARINTHIA – FIRST SLOVENE SCIENTIST WITH EU REPUTATION 12TH CENTURY

THE MOST (ALMOST 5) BEEKEEPERS PER 1,000 POPULATION IN EU

SLOVENIA – EXCERCISES

AUTHOR: ALEŠ ABSEC, ŠOLSKI CENTER NOVO MESTO, SZKŠ

TASK 1: TIME IN DIFFERENT COUNTRIES OF THE WORLD

Maria, Nataša, Björk, Vija, Alexia and Lidija became great friends while attending an English summer school in London.

They all agreed they would stay in touch even after returning home. In order to arrange group videoconferences, they created a special chart with their personal information, namely their addresses, telephone numbers, e-mail addresses etc. In addition, they wrote down the time when they are available to participate in the videoconferences.

name	location	country	available time for a videoconference		
			weekdays	Saturday	Sunday
Maria	Horta	The Azores/Portugal	18–22	20–22	19–22
Nataša	Astana	Kazakhstan	18–21	19–22	19–21
Björk	Reykjavík	Iceland	17–21	18–22	19–21
Vija	Ventspils	Latvia	17–21	19–22	18–21
Alexia	Naples	Italy	19–22	20–22	19–21
Lidija	Novo mesto	Slovenia	19–21	20–21	19–21

Table 1: Collected information

However, the girls forgot to add they live in different time zones. What is more, some of their native countries do not use DST (Daylight saving time or summertime).

With the help of the attached map or *Wikipedia/Time zone* determine the correct time zone (UTC + or - number of hours). Be careful: the Azores have a different time zone than Portugal.

Moreover, check if they are using DST (Daylight saving time – summertime). Use the help of *Wikipedia/Daylight saving time*.

name	location	country	time zone	DST
Maria	Horta	The Azores/Portugal		
Nataša	Astana	Kazakhstan		
Björk	Reykjavík	Iceland		
Vija	Ventspils	Latvia		
Alexia	Naples	Italy		
Lidija	Novo mesto	Slovenia		

Table 2: Time zones

We use Central European Time (CET), UTC + 1 hour. Complete the chart with the available time when we can 'video chat' with our 'English' girlfriends (use our CET). First for wintertime:

name	location	country	available time for a videoconference		
			weekdays	Saturday	Sunday
Maria	Horta	The Azores/Portugal			
Nataša	Astana	Kazakhstan			
Björk	Reykjavík	Iceland			
Vija	Ventspils	Latvia			
Alexia	Naples	Italy			
Lidija	Novo mesto	Slovenia			

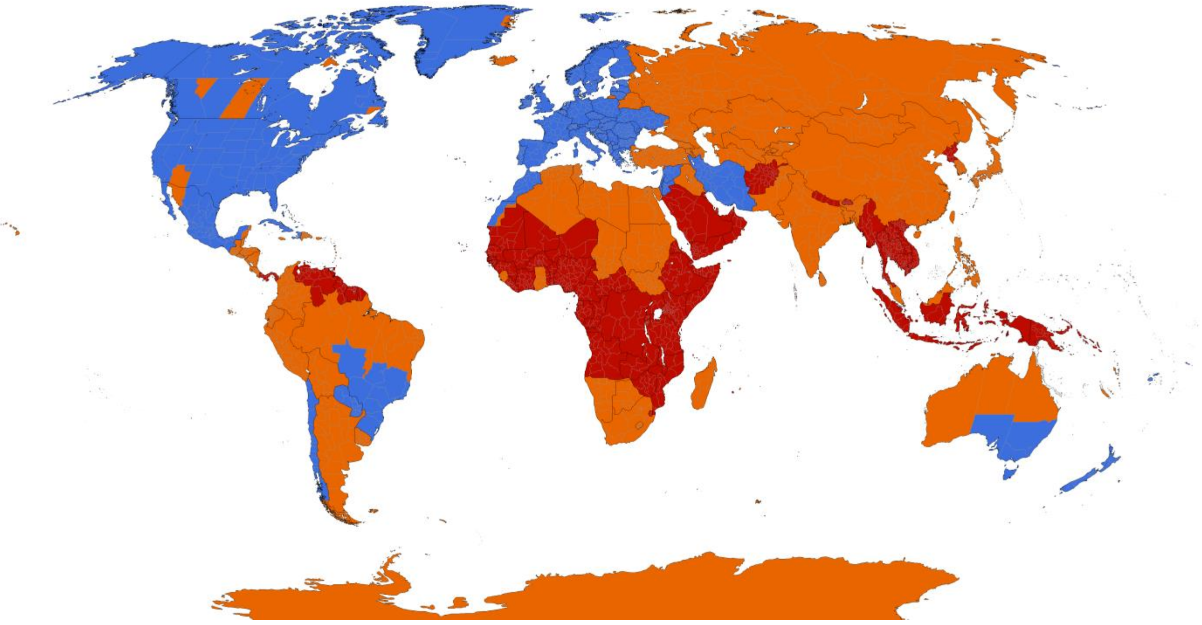
Table 3: Wintertime

And then for summertime (DTS):

name	location	country	available time for a videoconference		
			weekdays	Saturday	Sunday
Maria	Horta	The Azores/Portugal			
Nataša	Astana	Kazakhstan			
Björk	Reykjavík	Iceland			
Vija	Ventspils	Latvia			
Alexia	Naples	Italy			
Lidija	Novo mesto	Slovenia			

Table 4: Summertime

Picture 1 Time zones in Europe, Source: https://en.wikipedia.org/wiki/Time_zone



Picture 2 Daylight saving time – summertime, Source: Daylight saving time

(hint)

For the people who live in the countries with DST, the summertime is the same as the wintertime. Otherwise the formula changes and is hour + 2 – (time zone).

AUTHOR: PETRA ŽIBERT, ŠOLSKI CENTER NOVO MESTO, SZKŠ

TASK 2: PARKING HOUSES IN LJUBLJANA (1)

The Kongresni trg parking garage is located at the inner area of the city center. It operates 24/7 all year round. Parking is arranged on the first, second and third floors. Besides human-operated cash desk, the parking facility has three automated payment machines and a video surveillance system.

The Kongresni trg Parking Garage is located in the city center between the Filharmonija building and Slovenska cesta Road. The garage can be entered from and exited to the Slovenska cesta Road and Šubičeva cesta Road respectively and is located right below the Zvezda park (square). The parking garage provides parking areas in five stories. Three automated payment machines are located at the pedestrian entrances and exits. The parking garage has a video surveillance system.

Parking facility info:

- Number of parking spaces: 720, and 14 parking spaces for the disabled
- Parking fee:

a) Daytime tariff from 7 am to 12 pm: up to 3 hours = €1.20/hour
b) Daytime tariff from 7 am to 12 pm: more than 3 hours = €1.20/hour
c) Nighttime tariff from 12 pm to 7 am = €1.80/night
d) Long-term users

- Long-term users:

a) Uniform tariff for legal entities/contract users: €240.00/month
b) Uniform tariff for residents/contract users: €60.00/month

In Ljubljana a car can be parked in different parking houses. To solve the task, use the price below.

In all cases we assume we arrive to Ljubljana at 7.00.

1. Explore and explain in which parking house it is the cheapest to park a car, for 1 h (3 h, 5 h, 20 h).
2. Explore and explain in which parking house it is the cheapest to park a car, for a quarter of a day (half a day, a day).
3. Draw the graph of a function Price depending on time for 1 day for all four parking houses on the same coordinate system.
4. Find and write down the function Price depending on time for every parking house.

PRICE PH TRDINOVA

SHORT-STAY PARKING			
Tariff	Termin	Price for each started hour of parking	
I.	from 6:00 to 18:00	to 1 hour	2,00 €
		every next hour	2,40 €
Tariff	Termin	Price for each started hour of parking	
II.	from 18:00 to 6:00	1,20 €	

Cost of a lost parking card for short-stay parking: 25,00 €.
Cost of a 24-hour parking: 25,00 €.

VALUE CARDS FOR SHORT-TERM PARKING	
Prepaid parking card A Each hour of parking or fraction thereof is charged according to the currently valid price list.	70,00 €
Prepaid parking card B Each hour of parking or fraction thereof is charged according to the currently valid price list.	90,00 €
Parking vouchers A The package contains100 vouchers for short-term parking of one hour with 5% discount.	190,00 €
Parking vouchers B The package contains100 vouchers for short-term parking of two hour with 10% discount.	396,00 €

LONG-TERM PARKING	
Price for mountly rental of	
Option A For one designated vehicle.	150,00 €/month
Option A2 For two designated vehicles on one parking space and two parking ticket.	170,00 €/month
Option C For one non-designated vehicle.	190,00 €/month
Option E For residents and employess of surrounding area for one designated vehicle.	125,00 €/month
Night parking Monthly rent for one designated vehicle from 7 pm to 7 am.	70,00 €/month
Long-term parking ticket Price for lost-term parking ticket.	23,00 €

OTHER LEASES	
2 day rental	40,00 €
3 day rental	50,00 €

Source: http://www.parkiraj.si/uploads/file/cenik%20trdinova%202018%20EN.pdf , 5/1/2018

PRICE PH ŠENTPETER

SHORT-STAY PARKING			
Tariff	Termin	Price for each started hour parking	
I.	from 6:00 to 18:00	to 1 hour	2,00 €
		every next hour	2,40 €
Tariff	Termin	Price for each started hour parking	
II.	from 18:00 to 6:00	1,50 €	
Tariff	Termin	Price for each started hour parking	

Cost of a lost parking card for short-stay parking: 25,00 €.
Cost of a 24-hour parking: 25,00 €.

VALUE CARDS FOR SHORT-TERM PARKING

LONG - TERM PARKING	
Mesečni najem	
Option A For one designated vehicle.	150,00 €/month
Option A2 For two designated vehicles on one parking space and two parking ticket.	170,00 €/month
Option C For one non-designated vehicle.	190,00 €/month
Night parking Monthly rent for one designated vehicle from 7 pm to 7 am.	70,00 €/month
Long-term parking ticket Price for lost-term parking ticket.	23,00 €

Source: http://www.parkiraj.si/uploads/file/cenik%20sentpeter%202018%20EN.pdf , 5/1/2018

PRICE PH KAPITELJ

SHORT-STAY PARKING			
Tariff	Termin	Price for each started hour of parking	
I.	from 6:00 to 18:00	the first 30 minuts	1,00 €
		to 1 hour	2,00 €
		every next hour	2,40 €
Tariff	Termin	Price for each started hour of parking	
II.	from 18:00 to 6:00	1,50 €	

Cost of a lost parking card for short-stay parking: 25,00 €.
Cost of a 24-hour parking: 25,00 €.

VALUE CARDS FOR SHORT-TERM PARKING	
Prepaid parking card A Each hour of parking or fraction thereof is charged according to the currently valid price list.	70,00 €

LONG - TERM PARKING	
Price for mountly rental of	
Option A For one designated vehicle.	150,00 €/month
Option A2 For two designated vehicles on one parking space and two parking ticket.	170,00 €/month
Option C For one non-designated vehicle.	190,00 €/month
Option E For residents and employess of surrounding area for one designated vehicle.	125,00 €/month
Night parking Monthly rent for one designated vehicle from 7 pm to 7 am.	70,00 €/month
Long-term parking ticket Price for lost-term parking ticket.	23,00 €

Source: http://www.parkiraj.si/uploads/file/cenik%20kapitelj%202018%20EN.pdf , 5/1/2018

TASK 3: PARKING HOUSES IN LJUBLJANA (2)

A student came to Ljubljana at 8 a.m. and finds a parking place in the parking house Kongresni trg. He realised that he had forgotten his credit card and he only have 10 € in his pocket.

a) How long can he park there, if he needs to pay with 10 €?
b) How long can he park there, if he needs to pay with 5 €, because he needs another 5€ for something else?

Hint: the prices are shown in Task 2

AUTHOR: SANJA BAN, ŠOLSKI CENTER NOVO MESTO, STROJNA ŠOLA

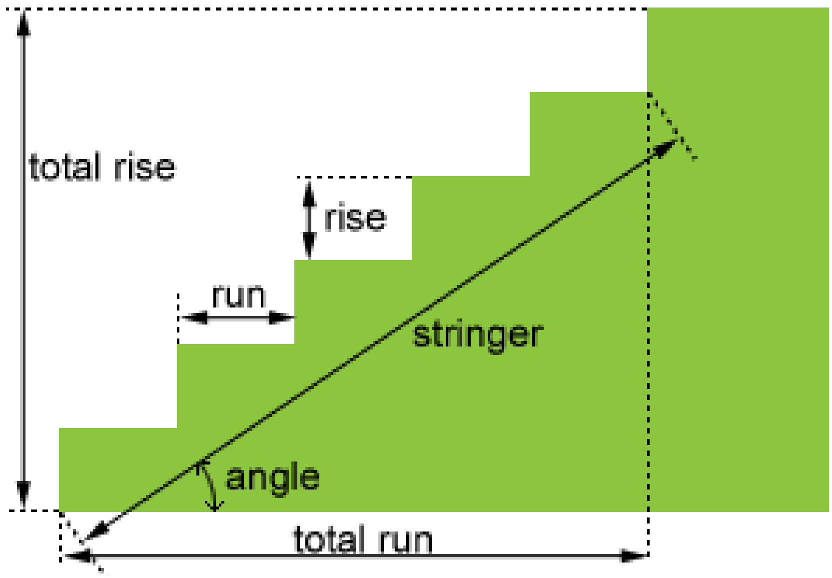
TASK 4: A STAIRCASE IN A HOUSE

We would like to build a staircase in a house.

Our step is between 61 cm and 65 cm long. We calculate the height (rise) of a stair using the equation:

2 x rise of a stair + 1 x run (tread) of a stair = 61 to 65 cm (ideally 63 cm)

The rise of a stair must be between 16 cm and 20 cm. Its run must be between 23 cm and 29 cm.



CALCULATE:

1. The total rise of the staircase is 2.5 m. Find out how many stairs are possible in this staircase if the rise of each stair is the same. Calculate the rise of a stair and round the result to the nearest mm.
2. Using the equation above calculate the run of a single stair.
3. What is the total run of the staircase?
4. Calculate the angle of the staircase.

AUTHOR: SIMONA PUSTAVRH, ŠOLSKI CENTER NOVO MESTO, SEŠTG

TASK 5: A MARATHON

Ann in Roy are getting ready for a marathon. Ann has decided to run 10 kilometres during the first week, then she is going to run one kilometre more during each following week. Roy has decided to run 4 kilometres during the first week, then he is going to extend the distance by two kilometres during each following week.

1. Complete the table.

	1^{st} week	2^{nd} week	3^{rd} week	4^{th} week
Ann (km)				
Roy (km)				

2. Present the data from the table in Geogebra in a coordinate system using the link http://url.sio.si/Dc3. (Use different colours for Ann and Roy.)

3. a) Calculate a linear model for Ann.

   Calculation:

   Answer:____

   b) Find the solution graphically in Geogebra as well.

4. a) Calculate a linear model for Roy.

   Calculation:

   Answer:____

   b) Find the solution graphically in Geogebra as well.

5. a) During which week of training will Roy and Ann run the same number of kilometres?

   Calculation:

   Answer:____

   b) Find the solution graphically in Geogebra as well.

6. How many kilometres is a marathon? ___________

   a) How many weeks will Ann need to run the distance of a marathon?

   Calculation:

   Answer:____

   b) Find the solution graphically in Geogebra as well.

c) How many weeks will Roy need to run the distance of a marathon?

Calculation:

Answer:____

Find the solution graphically in Geogebra as well.

AUTHOR: SANJA BAN, ŠC NOVO MESTO, STROJNA ŠOLA

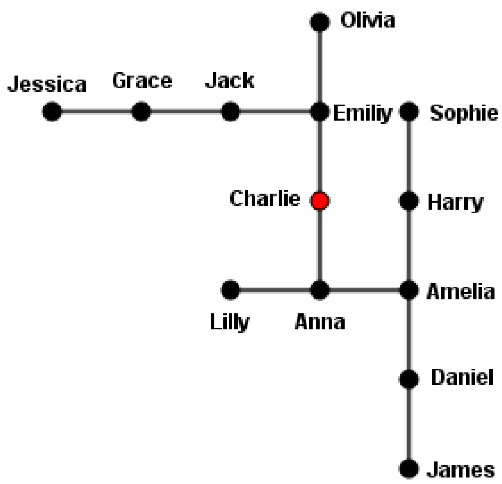
AUTHOR: MAJA KONČAR, ŠC NOVO MESTO, SGLVŠ

AUTHOR: SIMONA PUSTAVRH, ŠC NOVO MESTO, SEŠTG

TASK 6: LOGICAL EXCERCISES

1. There are 13 people in the group: James, Daniel, Amelia, Harry, Sophie, Anna, Lily, Charlie, Olivia, Jack, Grace, Jessica and Emily. The following pairs mean that they know each other and that they have a phone number of each other: {James, Daniel}, {Daniel, Amelia}, {Amelia, Harry}, {Anna, Amelia}, {Anna, Lily}, Anna, Charlie}, {Harry, Sophie}, {Emily, Charlie}, {Emily, Olivia}, {Emiliy, Jack}, {Grace, Jessica}, {Jack, Grace}. Which person would tell the news to spread as quickly as possible among all the people in the group?

   (Solution: Charlie)



2. 15 boys left the school's dining room first. Twice as many girls as boys remained in the dining room. Then 20 girls left the dining room. At this point there was the same number of girls and boys in the dining room. How many girls and how many boys were there in the dining room at the beginning?

   (Solution: 40 girls, 35 boys)

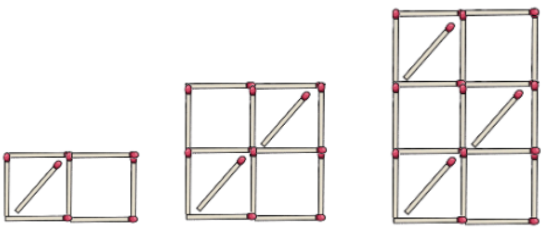
3. Each puzzle consists of a 9x9 grid containing given clues in various places. The aim is to fill all the empty squares so that the numbers 1 to 9 appear exactly once in each row, column and 3x3 box.

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

Solution:

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

4. With matches, we make up the figures as you can see in the picture.



x = 1 *x* = 2 *x* = 3

a) Draw a figure for x = 4.
b) Let the x be the sequence number of the figure and let the y be the number of matches in the figure. Write the relationship between x and y.
c) Calculate how many matches will there be in the 100th figure.

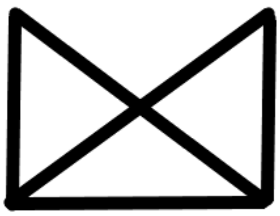
5. The heart of a grown-up person pumps around 5 litres of blood per minute. Estimate, how many cubic meters does the heart pump in 50 years of life. (Solution: 131400 cubic meters.)

6. The day before yesterday was Friday. What day will be in 12 days from now?
(Solution: Friday)

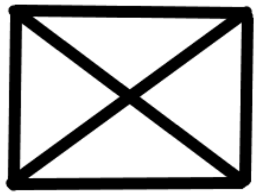
7. Draw with one move

Which of the following shapes can you draw without moving a pen from a paper and draw twice on the same line.

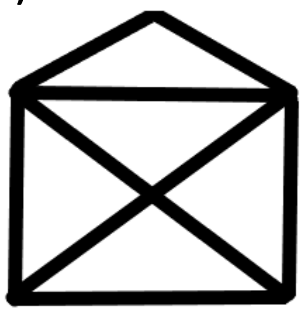
a)



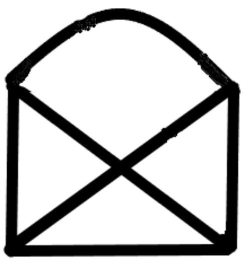
b)



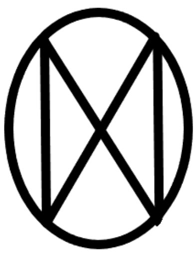
c)



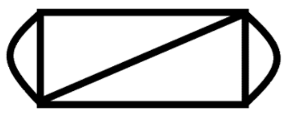
d)



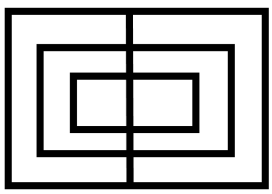
e)



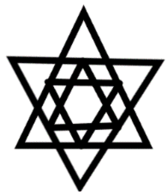
f)



g)



h)



(Solution: a, c, e, f, g, h)

AUTHOR: JANJA BLAŠKO, ŠC NOVO MESTO, SEŠTG

TASK 7: MATH EXCERCISES

1. Lea started her bike ride from Črmošnjice to Vahta. The velocity when riding up the hill was 14 km/h, while riding down the hill, on the way back to Črmošnjice, it was 24 km/h. How many km is there from Črmošnjice to Vahta if Lea needed 16 minutes less down the hill than up the hill?

   (A) 10,2 (B) 8,2 (C) 9,2 (D) 11,2 (E) 12,2

2. There were blue and yellow monsters living in a cave. Each blue monster had 8 heads, 12 feet and 4 tails while each yellow monster had 10 heads, 8 feet and 6 tails. The total of all the tails the monsters had was 84. There were 8 yellow legs less than the total of blue heads. How many blue monsters lived in the cave?

   (A) 12 (B) 9 (C) 11 (D) 10 (E) 8

3. Mia has a rectangular garden bed in her vegetable garden. She decided to enlarge the width and the length of the garden bed by 20 %. By what percentage will its area size be larger?

   (A) 20 (B) 40 (C) 44 (D) 80 (E) 144

4. The sum of natural numbers *a* and *b* is 64. If we multiply *a* with 9, and *b* with 23, the product is the same. What is *a*?

   (A) 13 (B) 18 (C) 23 (D) 46 (E) 44

5. Mark has 140 blue and 105 white balls. He is going to put them in different boxes so that each box contains an equal amount of balls of the same colour. What is the smallest number of boxes he needs?

   (A) 1 (B) 7 (C) 35 (D) 1 (E) 245

6. At the national physics competition every competitor had to answer 10 questions. For each correct answer the competitor got 8 points, and for each incorrect answer they lost 2 points. All the competitors answered all the questions. Simon got 31 points, Sofia got 10, Lea got 6 and Alexander got 3. How many correct answers did they have altogether?

(A) 11 (B) 13 (C) 15 (D) 23 (E) 17

7. If you take a two-digit number and subtract its reverse, you get a two-digit number, which is always divisible by:

(A) 2 (B) 3 (C) 5 (D) 7 (E) 8

8. For the real numbers x and y is $x^2 + y^2 = 48$ and $xy = -24$. How much is $x^3 + y^3$?

(A) - 81 (B) - 224 (C) 0 (D) 24 (E) -24

9. Father, mother, Tina, Laura and Elena sit behind the dining table and have dinner every night. There are 5 seats at the table. The father and mother always sit at the same seats. How many possibilities are there for the girls to sit?

(A) 3 (B) 5 (C) 6 (D) 20 (E) 24

10. There was a full barrel of juice. First we poured out 32 % of the juice and then additionally 36 l. In a barrel left 28 % of the primary quantity of the juice. How many litres were there in the full barrel?

(A) 65 (B) 75 (C) 90 (D) 140 (E) 120

11. There was the same number of ostriches and goats in the courtyard. Sara counted the number of the legs that all the ostriches and the goats have altogether. How many legs did she count?

(A) 26 (B) 32 (C) 38 (D) 42 (E) 44

12. What is the value of the simplified expression $\left(\left(3-\left(2-\left(1-(a-1)^{-1}\right)^{-1}\right)^{-1}\right)^{-1}\right)^{-1}$?

(A) $\frac{2a-3}{1-a}$ (B) $\frac{a-1}{2a-3}$ (C) $\frac{2a-3}{a-1}$ (D) $\frac{2a-3}{a+1}$ (E) $\frac{1-a}{2a-3}$

13. The lengths of the sides of a rectangle with the perimeter 16 are natural numbers. What can the area of a rectangle be?

(A) 8 (B) 14 (C) 16 (D) 20 (E) 24

14. David and Leon are playing table tennis. If David had 3 points more, he would have twice as many points as Leon. If David had 12 points less, he would have 1/3 of Leon's points. How many points does David have?

(A) 15 (B) 7 (C) 10 (D) 11 (E) 16

15. There are 4 children on the playground. Every child wrote one number 1, 3 or 9 – on a piece of paper. What number can we get if we multiply the four numbers they wrote?

(A) 90 (B) 6561 (C) 150 (D) 19683 (E) 2048

16. On a chicken farm, there are 25 % of white chickens and 75 % of brown chickens. Out of those, currently only 50 % of the white and 20 % of the brown chickens are laying eggs. The number of chickens that are laying eggs is 99. How many chickens are there on the farm?

(A) 99 (B) 250 (C) 350 (D) 360 (E) Impossible to determine.

AUTHOR: SIMONA PUSTAVRH, ŠC NOVO MESTO, SEŠTG

TASK 8: CANDLE BURN TIME (OR BURN RATE)

Tony tried to determine a candle's burn time. He collected data of its height in two-minute intervals and kept track of it:

Time (min)	Height (cm)
0	7.5
2	7.2
4	6.6
6	6.1
8	6.0
10	5.6
12	5.0

1. Display data in a coordinate system in GeoGebra on the link: http://url.sio.si/Dxx .

2. Which linear model best fits the data? (Clue: Sketch all 4 models in GeoGebra.)

a) $y = 0.2x + 7.5$ c) $y = -0.2x + 7.5$

b) $y = -0.3x + 7.5$ d) $y = -0.15x + 7.5$

3. Fill in the gaps according to the selected model.

   A candle has a height of _______ cm at the beginning.

   It burns _______ cm per minute.

4. a) According to the selected model, assess and calculate how fast the candle will reach the height of 2 cm.

   Calculation:

   Answer____

   b) Illustrate the solution on the graph in GeoGebra.

5. a) According to the selected model, how fast will the candle burn out? (or: What is the candle's burn time?)

   Calculation:

   Answer____

b) Illustrate your solution on the graph in GeoGebra..

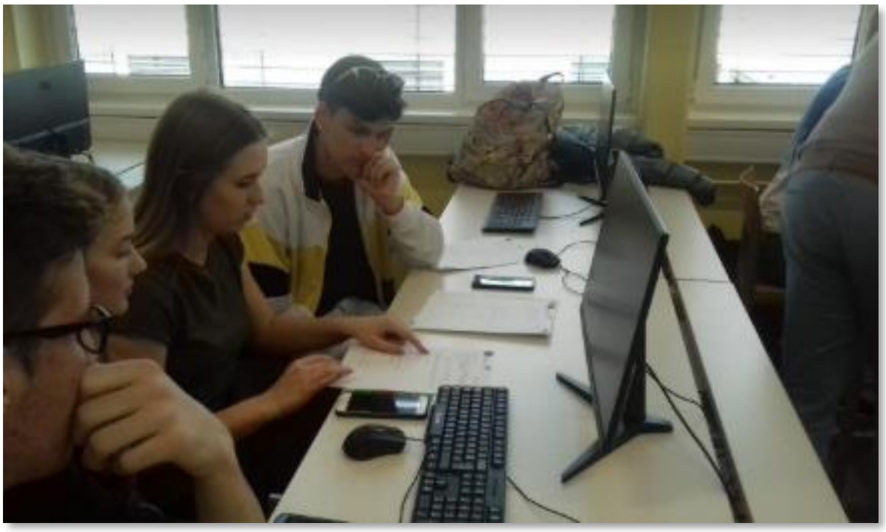
6. a) According to the selected model, how fast will a candle, having a height of 10 cm burn out (or: what is the candle's burn time)?

   Calculation:

   Answer_______________________________________

   b. Illustrate your solution on the graph in GeoGebra.

7. Consider your outcomes:
   What does a candle's burn time depend on?



TASK 9: THROWING A BASKETBALL INTO THE BASKET

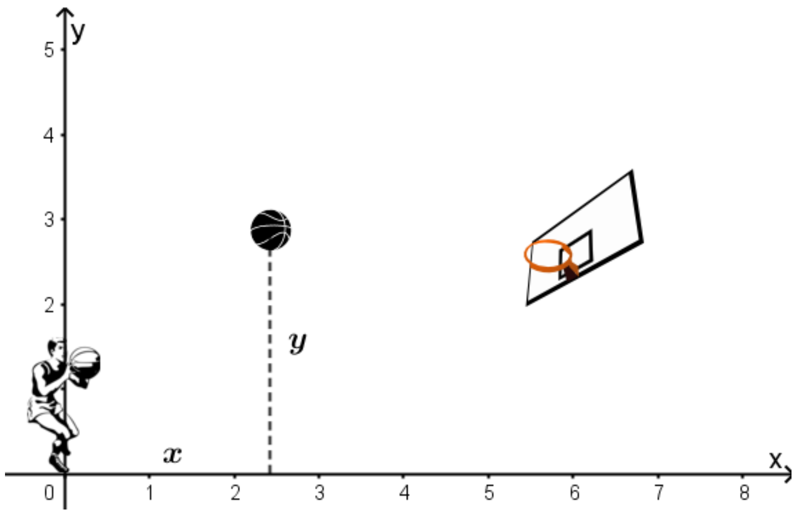
In this task you will determine the curve a basketball makes when thrown with an angle to the horizontal towards the basket.

1 Watch a film about throwing a ball into the basket on http://url.sio.si/DqH.

Sketch the curve made by the ball.

What is the curve called? ___________________________________

2 The player is standing at the base of the coordinate system and aims the ball at the basket. The information in the table is given in metres (*x* is the distance of the ball from the player, *y* is the height of the ball).



x [m]	*y* [m]
0.3	2.3
0.9	3.1
1.7	3.7
2.6	4.2
4.1	4.3
4.8	4.1

5.5	3.6

Illustrate the solution in GeoGebra on http://url.sio.si/DrA and choose the most appropriate model below:

a) $y = 0.2x^2 + 1.4x + 1.95$ c) $y = -0.2x^2 - 1.4x + 1.95$

b) $y = -0.1x^2 + 0.6x + 3.2$ d) $y = -0.2x^2 + 1.4x + 1.95$

3 Calculate the approximate height of the ball when it is at a distance of 1.5 m from the player. Illustrate on a graph to check your answer.

Calculation:

Answer: ____

4 Illustrate on a graph the approximate distance of the ball from the player when the ball reaches the height of 3.4 m.

Answer: ____

5 Illustrate on a graph the approximate point at which the ball reaches its maximum height.

Answer: ____

6 Will the player score at a distance of 6 m? (Clue: Check the height of the basket online)

Calculation:

Answer: ____

7 Watch a video on http://url.sio.si/Dr2 and complete the task on http://url.sio.si/Dr3 (the task is on the left).

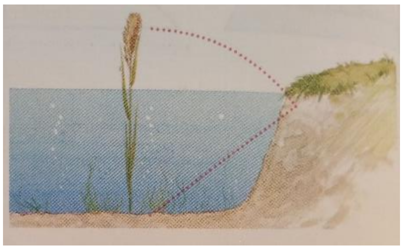
8 As your final step do some research on online examples of parabola. Have you seen any of them at the House of Experiments?

AUTHOR: SANJA BAN, ŠC NOVO MESTO, STROJNA ŠOLA

TASK 10: THE TIVOLI POND IN LJUBLJANA (SLOVENIA)

The approximate dimensions of the Tivoli pond are: length 140 m, width 50 m.

a. A plant that rises 0.8 m above the water level grows 1.6 meters from the edge of the pond. If we pull its top to the bank, it touches the surface. How deep is the pond?



b. The actual depth of the pond is between 0.9 m and 1.3 m. How many cubic meters of water are there in the pond?

c. On the pond, one can row a boat. How long is the longest straight line from one end of the pond to the other?

TASK 11: THE OLDEST WOODEN WHEEL, EXHIBITED IN THE CITY MUSEUM

The oldest wooden wheel with an axis was found in Slovenia. It measures 72 centimeters in diameter and is about 5 centimeters thick.
The 124 cm long axis is attached to the center of both wheels, so when moving it rotates together with both wheels.

How many times does this wheel turn around along the distance of 1km?

TASK 12: MONUMENT TO NAPOLEON (LJUBLJANA)

A student is 1.65 m tall and her shadow is 55 cm long. At the same time the length of the shadow of the monument is 4.7 meters. Calculate the height of the monument.

TASK 13: THE ZOIS PYRAMID IN LJUBLJANA

The base-edge is 2.6 m, and the slant-height is 5.6 m. Calculate the mass of the pyramid if it is built of stone with a density of 2700kg/m^3.

TASK 14: THE ROBBA FOUNTAIN IN LJUBLJANA

The lower part of the fountain is a dodecagon. Estimate the length of its sides. The obelisk on the fountain is 12 m high. How many square meters of wooden panels do we need to protect the well, if it is in the form of a dodecagon-based regular pyramid?

TASK 15: FUNICULAR

The lower station of the funicular is located at 291 m above sea level, the upper at 361 m above the sea level, and the slope of the funicular is 47°.

a. Calculate the height difference between the stations.
b. Calculate the length of the line.
c. The driving time is about 1 minute. What is the average speed of the funicular (in m/s and in km/h)?

TASK 16: THE MARKET

Tulips, daisies and roses are sold at the Ljubljana market.

The father bought 3 tulips, 5 daisies and 4 roses for 18,70 €. The son bought 2 tulips, 2 daisies and 3 roses for € 11.20. The mother got 7 tulips, 3 daisies and 5 roses and she paid € 21.10. What is the price of a single tulip, a daisy and a rose if they were all bought from the same seller?

TASK 17: BUTCHERS' BRIDGE – LJUBLJANA'S LOVE BRIDGE

The bridge is about 33 meters long. The fence of the bridge is made of 8 horizontal steel wires where the lovers hang padlocks.

a) How many meters of the wire is there on the bridge?
b) If there are 100 padlocks on one piece of the wire and the weight of one lock is 100g, calculate the weight of all the locks.

AUTHOR: MELITA BLATNIK, ŠC NOVO MESTO, SGLVŠ

AUTHOR: SANJA BAN, ŠC NOVO MESTO, STROJNA ŠOLA

TASK 18: THE DRAGON BRIDGE IN LJUBLJANA

a) The larger dragons weigh 4 tons each. They are made of 5 mm thick copper plate with density of 8290 kg/m^3. Calculate the surface of all the dragons if the plate is stretched ideally.

b) What is the length of the road at the Dragon Bridge, if there is a circular arc below the bridge with a diameter of 33.34 m and a central angle of 46°?

AUTHOR: MELITA BLATNIK AND DINA PLUT, ŠC NOVO MESTO, SGLVŠ

TASK 19: NEBOTIČNIK IN LJUBLJANA

When the Ljubljana Nebotičnik (Skyscraper) was built in 1933, it was the highest building in Central Europe with the height of 70.35 m (13 floors).

The Ljubljana castle from the 12th century has an altitude of 376 meters above the sea level and its tower is 24 meters high.

The Robba fountain under the castle has an altitude of 295 meters above the sea level.

Johnny, standing on the top of the castle tower, loses a ring which falls into Robba's fountain. At the same time Mary drops a coin from the top of Nebotičnik. It lands on Dunajska Street.

The coin and the ring have the same weight.

a) Which of the two items touches the ground first: the ring or the coin?
b) What is the time difference between the falls of both items?

AUTHOR: LORENA MIHELAČ, ŠC NOVO MESTO, SGLVŠ

TASK 20: FROM FREQUENCY TO WAVELENGTH

The *wavelength of light* is defined as the distance between subsequent crests, valleys, or other fixed points. The *frequency* is the number of waves that pass a given point in 1 (one) second. The usual unit for frequency is Hertz or Hz, which is 1 oscillation per second.

The equation used to convert between them is:

frequency x wavelength = speed of light

$$\lambda\, v = c$$

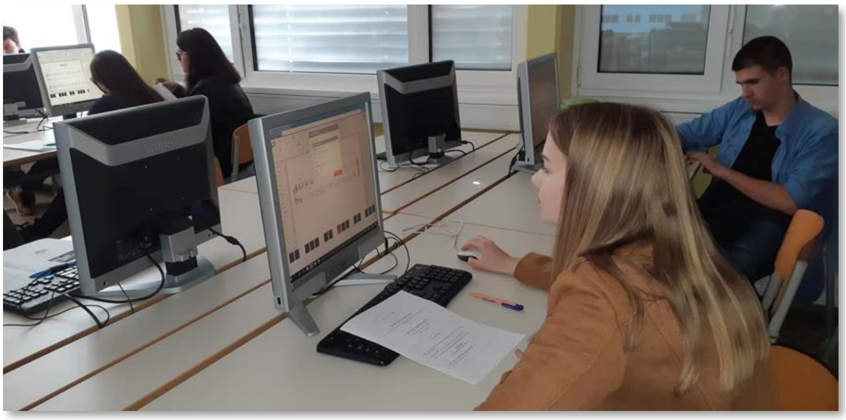
where λ is wavelength, **v** is frequency, and **c** is the speed of light. So:

wavelength = speed of light / frequency frequency = speed of light / wavelength

The higher the frequency, the shorter the wavelength.

For example, if we would divide the speed of light, which is $2{,}99792458 \times 10^{8}$, a wavelength (orange-yellow), which has 619.69 nanometer (nm), we would obtain 440 Hz, tone A3.

a) What color would we obtain if we would have the frequency 523.252. Which tone is it?
b) What color would we obtain if we would have the frequency 659.255. Which tone is it?



LATVIA -EXCERCISES

AUTHOR: ELĪNA STUPOLE, VENTSPILS VALSTS 1 GIMNĀZIJA

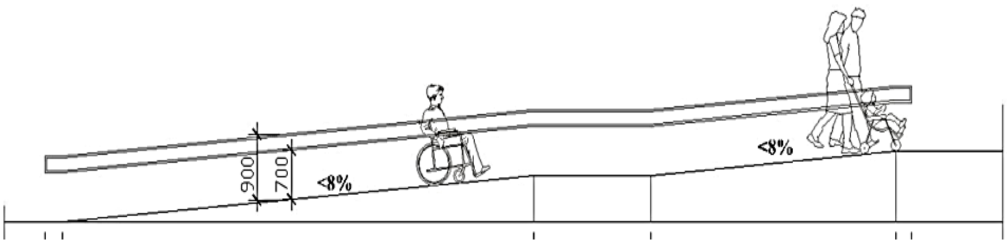
TASK 21: ACCESSIBILITY OF BUILT ENVIRONMENT

The Construction Law of Latvia stipulates the necessity of accessibility of built environment for all constructed buildings.

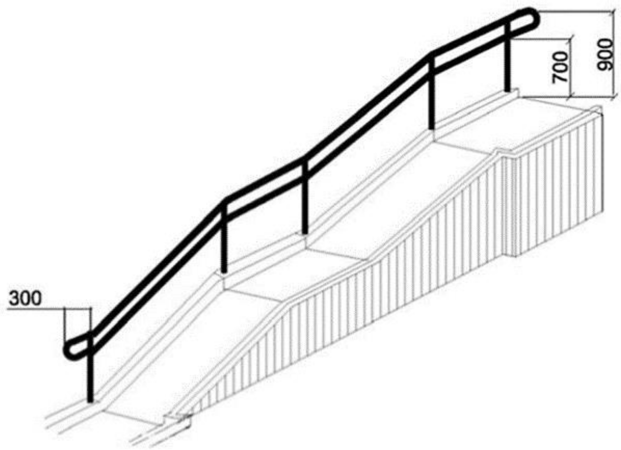
To comply with this law, the construction standards incorporate certain requirements, implementation of which will give the disabled people the possibility unaided and easily to enter, move around and to use comfortably different premises and buildings.

This is why ramps are constructed.

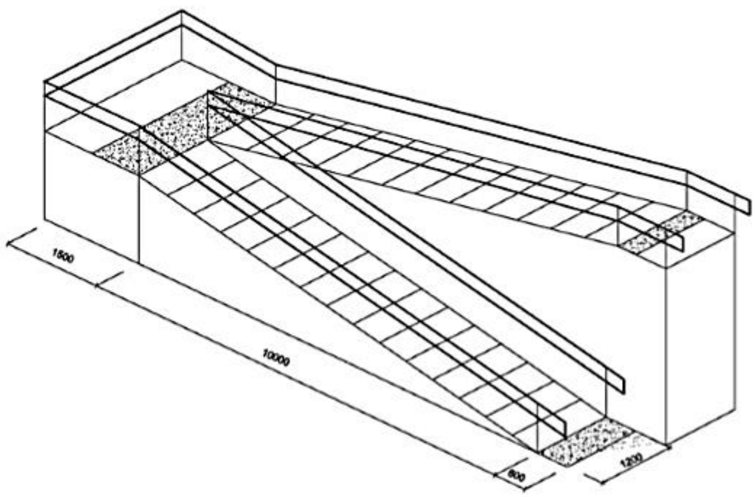
According to the Standards, the pitch (inclination) of outdoor ramps must not exceed 8% (and builders usually choose this 8%), but for covered and indoor ramps the pitch must not exceed 5% (and builders usually choose this 5%).



For ramps with the length over 10 m, there must be constructed at least one intermediate landing, but not further away than every 6 m. The minimum length of the intermediate landing should be 1.2 m. (Fig.1)



If the ramp changes the direction on the intermediate landing, the length of the intermediate landing must not be less than 1.5 m (Fig.2).



1. Create the interconnection which shows the dependence between the length of the ramp (l) and the height (h) which people have to reach.

    l(h)=

2. Construct a graph which allows to calculate easily the length of the required ramp, if we know the height which people in wheelchairs have to manage.

3. Questions: What is the smallest height of the ramp which requires building an intermediate landing? What solutions could you suggest for building a ramp so that it would not take up a very long part of the sidewalk considering that there is no possibility of installing an elevator.

TASK 22: THE FUNKY FRIENDS

Blondie, Blackie and Reddie, three friends, met one day and noticed an interesting thing. One of them is fair-haired, a second – dark-haired, and a third – red-haired. However, the guy with the black hair said to Blondie: "The hair colour of any of us does not match our names."

What is the hair colour of each of the three friends?

TASK 23: FRIENDS – ATHLETES

The four friends – Juhani, Leon, Valto and Kalle – won the first four places in a sports competition. We know that Juhani was not the first or the fourth. Leon won the second prize. Valto was not the last of the friends.

Which place was won by each of the four friends?

TASK 24: THE CAMP IN HELSINKI

Juho, Markku, Tomi and Mikko met and became friends at a summer camp in Helsinki. They came to this camp from different cities: one was from Turku, a second – from Tampere, a third – from Pori, and a fourth – from Porvo.

Which cities exactly did these guys come from?

What we know is that Juho and the guy from Porvo lived in the same small room and have never been in Turku or Pori. Tomi played basketball teamed up with the boy from Turku, but they competed against the friend from Porvo. Mikko and the boy from Turku played chess in the evenings.

TASK 25: DIFFERENT LIQUIDS IN DIFFERENT CONTAINERS

Four different liquids – milk, lemonade, juice and water – were each poured into a different container: a bottle, a glass, a mug and a jar. What we know is that the bottle does not contain water or milk. The container with lemonade stands between the mug and the container with juice. The jar does not contain either lemonade or water. The glass stands next to the jar and the container with milk.

Which container holds each of the liquids?

TASK 26: KOKA GARUMS (1)

I method.

2 cm on the ruler represents 1m on the tree. Tree is 20 cm high on the ruler. What is the height of the tree in the real life?

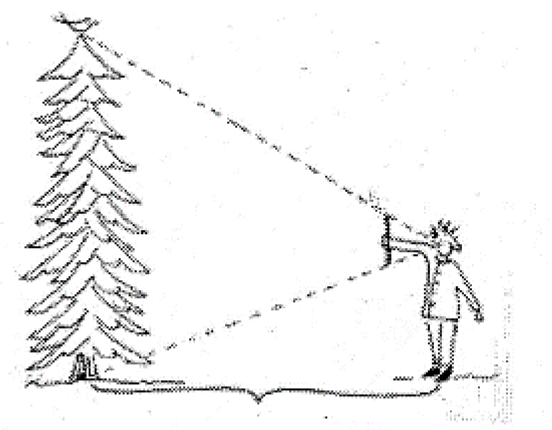
$$\frac{heigh\ of\ the\ tree\ on\ the\ ruler\ (cm)}{\text{"1 m"}\ of\ height\ on\ the\ ruler\ (cm)} = \frac{20}{2} = 10\ m$$

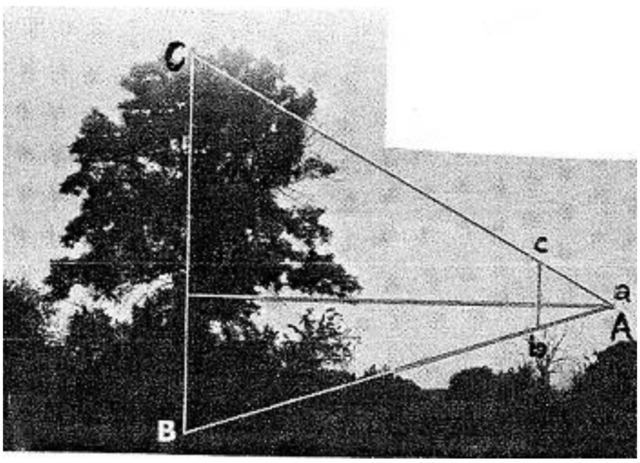
Do the same measurement, to know the height of trees “A” and “B”, using the ruler.

	Object “A”	Object “B”
The height of the tree on the ruler (cm)		
“1 m” of the height on the ruler (cm)		
Height of the tree in the real life (m)		

TASK 27: KOKA GARUMS (2)

II method.





Take a wooden stick, which is just as long as a fully stretched out arm, from the shoulder to the palm. While looking at the stick, find the distance until the stick covers the tree from the roots until the top. That is the tree height.

Mathematical reasoning:

The triangles abc and ABC are similar triangles, there for, if the distance from your eye until the stick is equal with the stick's length, then the distance from the eye until the tree is the same as the trees height.

	Object "A"	Object "B"
Tree distance until the experiments in feet		
experiments feet length		
Tree distance until the experiments in meters		
The actual trees height in meters		

TASK 28: CIRCLES AND ELLIPSE IN REALITY

1) Draw five concentric circles
2) The radiuses of circles are 3m; 2,5m; 2m; 1,5m; 1m
3) Color circles in two colors, but areas next to each other can't be colored in the same color.

Fill the table with needed calculations.

R (m)		
3		
2,5		
2		
1,5		
1		

Sketch a drawing. Calculate the size of areas which you need to color.

4) How much liters of each color will you use? (Needed amount of color for square unit is shown on the paint can)

1.option	2.option

5) Price for both paint cans is the same. Will the cost of the paint that is used for painting the area be different if you start to color from the center? Why? Which way is cheaper?

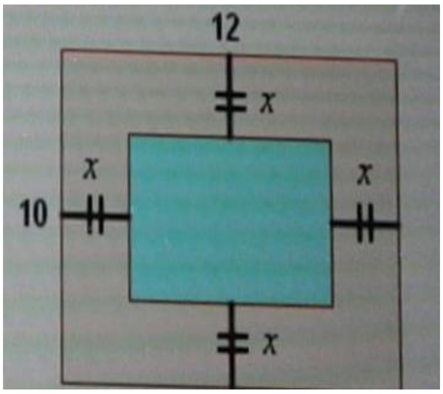
6) Can you draw an ellipse? Try to do it using only chalk and string.

ITALY - EXCERCISES

AUTHOR: GABRIELLA MARRA AND TERESA D’ACUNTO

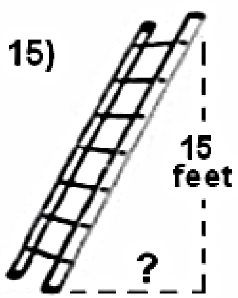
TASK 29: THE FOUNTAIN

A courtyard has a rectangular shape with sides of 12 meters and 10 meters. in the center of the courtyard a rectangular basin has been created so that all the edges of the pool have the same distance x from the contour of the courtyard. determines this constant distance, knowing that the area of the pool is 48 square meters



TASK 30: THE LADDER

A ladder is resting against a wall. The top of the ladder touches the wall at the height of 15 feet. Find the distance from the wall to the bottom of the ladder if the length of the ladder is one foot more than twice its distance from the wall.



1. In a stable there are gooses and bunnies. Counting the heads are 32 and pauses are 100. How many are the gooses and how many are the bunnies?

AUTHOR: BRUNELLA SCHETTINO AND LAURA RICCIO

TASK 31: LOGIC GAMES

QUESTIONS	ANSWER
A. MORE THAN IN THE USA, HAVE THE 4TH OF JULY ALSO IN ENGLAND?	
B. HOW MANY BIRTHDAYS DOES A MEDIUM MAN HAVE?	
C. SOME MONTHS HAVE 31 DAYS; HOW MUCH DO HAVE 28?	
D. IS IT LEGAL FOR AN ITALIAN MAN TO MARRY THE SISTER OF HIS WIDOW?	
E. DIVIDE 30 FOR 1/2 AND ADD 10. HOW MUCH DOES?	
F. IF THERE ARE 3 APPLES AND YOU BRING 2, HOW MANY APPLES DO YOU HAVE AT LAST?	
G. THE DOCTOR GIVES YOU THREE PILLS SAYING TO TAKE ONE EVERY HALF OUR. HOW MUCH MINUTES WILL YOU TAKE FOR THE PILLS?	
H. A FARMER HAS 17 SHEEP AND ALL EXCEPT 9 DYE. HOW MANY SURVIVES?	

TASK 32: JUST FOR FUN …

A. 32 minutes before 19 equals:

a. 28 minutes AFTER 18
b. 18.36
c. 6.28
d. 20.28

B. Gianni is taller than James, George is taller than Gianni. Who is the lowest of Gianni, Giorgio and James?

C. If the sum of the ages of A, B and C is 60 years old, and A has half of the years of C, while **B has the age of C-minus to A: what is the age of A, B, C?**

D. Mr. Rossi has four daughters. Each daughter has one brother. How many sons has Mr. Rossi got?

E. Riddle of the uncertain seller

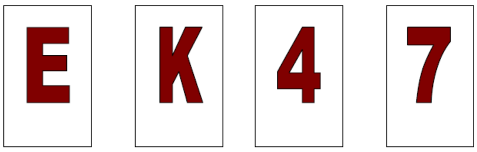
A seller of furniture sells for 80 euro a rack that had purchased at 70 euros. The seller changes his mind. He repurchases the rack for 90 euro and at last he resells it for 100 euro. How much does it have earned?

TASK 33: NUMBERS IN TABLE OF 3X3 ELEMENTS

Are you able to put in a table of 3x3 elements, the numbers from 1 to 9, so that each rule and each diagonal gives 15 as sum? How?

TASK 34: THE PLAY WITH CARDS

You have four cards which have a number printed on a face and a letter printed on the other side



There is a rule according to which cards should be printed. If a card has printed a vowel on one side, then there must be printed on the other side an even number. What cards you have to turn to check that the rule has been followed?

AUTHOR: BRUNELLA SCHETTINO

TASK 35: THE SNAIL

A snail climbs along a 10-meter-long pole.

Every day it rises 3 meters and every night, while sleeping, it slides down by 2 meters.

After how many days does the snail reach the top of a pole?

TASK 36: THE CIGARETE

A person manages to build a cigarette with four butts.

One day he managed to smoke 17 cigarettes with this trick.

How many butts did he managed to collect?

TASK 37: THE THREE BOXES

There are 3 boxes: the first contains two red balls, the second contains two yellow balls and the third contains a red and a yellow ball.

On the respective lids there are the writings: RR, YY, RY.

In placing the labels confusion has been made and the lids are in disarray and what is written on the lid does not coincide with the contents of the box.

Without looking in each box, how many balls do you need to extract to determine the exact contents of the three boxes?

TASK 38: COOK THREE HOT DOGS

There are only two hot dogs on the grill at a time.

Each hot dog must cook three minutes per side.

What is the minimum time to cook all three hot dogs?

TASK 39: THE CYCLIST’S AVERAGE

A cyclist climbs the mountain at an average of 20 km / h.

At the top, he goes down along the same path, at an average of 60 km / h.

What is the overall average speed held by the cyclist throughout his journey?

TASK 40: THE WORM

Three books of 100 sheets are placed on a shelf of a bookcase. A worm began to chew the first sheet of the first book and proceeding, in order, ended up chewing the last sheet of the last book.

How many sheets has it eroded?

AUTHOR: GABRIELLA MARRA

TASK 41: THE CASHIER IS EMPTY!

Three very honest and polite gentlemen have dinner at an inn. The first of them, when he has finished dinner, asks for the bill. The owner replies: "Go to the cashier, count how much money there is, put the same and take 2 euros for change." Even the second, when he has finished dinner, asks for the bill.

The owner replies: "Go to the cashier, count how much money there is, put the same and take 2 euros for change" Finally, the third man, when he asks for the bill he receives the same answer: "Go to the cashier, count how much money there is, put the same and take 2 euros for change.

" When the three left, the master, completely satisfied, opens the box and finds it empty! "The world is full of thieves! He thought! but he was wrong." Considering that the three gentlemen did not steal anything and followed the instructions of the master, could you say how much there was in the box at the beginning?

TASK 42: THE ROPE CUTTER

You have a 7 m long rope and every day you cut it a meter. After how many days will the rope be completely cut?

TASK 43: THE TWELVE COINS

You have 12 apparently equal coins. But one of them is false and can be recognized because of its weight which is slightly less than the others. Is it possible to identify the counterfeit currency by making at most three weights with a scale with equal arms?

TASK 44: A THREAD AROUND THE EARTH

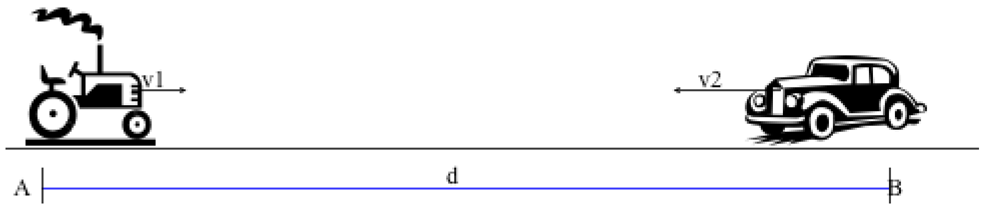
Let's suppose that the perfectly spherical earth measures 40000 km at the line of the equator, and a wire of the same length turns around the Equator. We cut the thread, add a meter to it, we tie it with a knot and leave the new ring at a constant distance from the surface. Can a cat pass between the wire and the earth?

AUTHOR: GABRIELLA MARRA

TASK 45: PROBLEM (PHYSICS)

Consider two drivers, A and B; distant from each other. At the same time, they begin to move on a rectilinear trajectory with opposite lines; the speed of A is v1 and that of B is v2, both assumed to be constant.

After how long and at what distance from the two starting points will the two drivers meet?



TASK 46: THE PROBLEM OF THE DONKEY AND THE MULE

A donkey and a mule travel together, carrying loads of sacks of wheat for a few hundred pounds each.

The donkey addressing the mule says:

"If you give me ½ quintal of your load, mine will double yours" (*)

The mule responds to the donkey:

"If, on the other hand, you give me ½ quintal of your cargo, mine will be triple yours". (**)

How much load do the two animals carry?

MATH IN EVERYDAY LIFE

AUTHOR: LORENA MIHELAČ, ŠC NOVO MESTO

EXAMPLE 1: TELLING TIME

A lot of math concepts need to be understood in order to tell time. We have to know that there are 24 hours in a day, that each hour is 60 minutes, and each minute is 60 seconds. We need also to have a “general” understanding how long a “second” is.

EXAMPLE 2: SHOPPING

How much is this shirt or blouse going to cost once the 40% sale is applied?

What about once the 8% tax is added?

What if it’s advertised as “half-off,” or “20% off the *sale* price”

EXAMPLE 3: COOKING

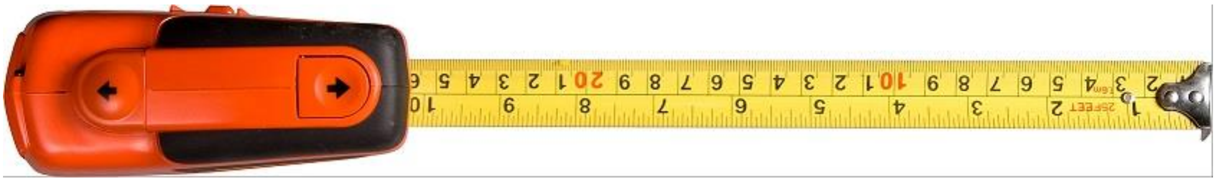
The recipe calls for “2 tablespoons” of sugar. You only have a teaspoon, or a soup spoon.

The recipe calls for “3/4 cup,” but you only have a quarter cup measuring tool and a half cup measuring tool. How much adds up to “3/4”?

Changing teaspoons to tablespoons is one thing, changing pounds to kilograms is another.

EXAMPLE 4: DECORATING

Is there enough space in here for the couch we want? How to check it? With a measuring tape?



What do the two sides of the measuring tape measure?

EXAMPLE 5: DRIVING A CAR

Operating a car or motorcycle is ultimately nothing but a series of calculations.

- ✓ How many miles to the destination?
- ✓ How much gas in the car?
- ✓ How many miles per hour am I able to drive?
- ✓ How many miles per gallon does my car get?

Oh no, I've hit a traffic jam, and now my pace has slowed, am I still going to make it to work on time?

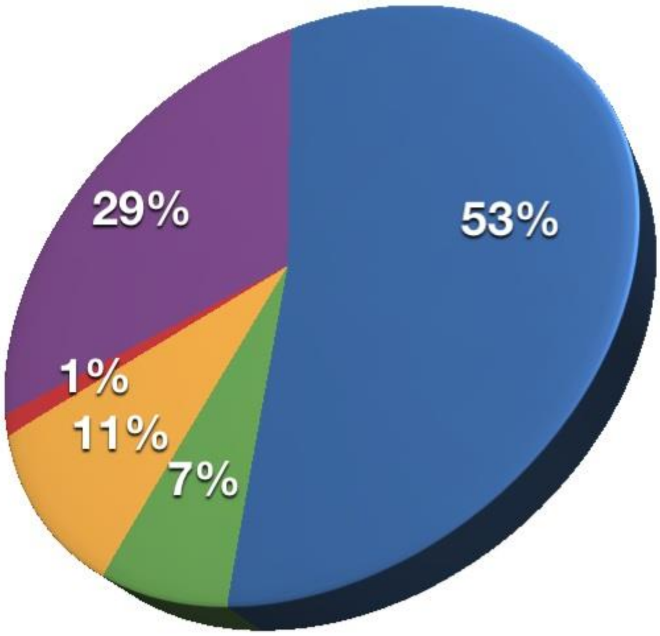
EXAMPLE 6: WATCHING THE NEWS

The polls are in! 53% of people believe… *wait*.

What does that mean?

And, 53% of *which* people?

How are these results calculated?



If you don't know what the statistics that you're being given *mean,* you're stuck having to listen to the reporter or the person telling you about the study, rather than being able to decipher the complicated results on your own.

Math is necessary in both gathering and interpreting the data.

EXAMPLE 7: WORKING ANY JOB

How much do you make an hour?

That's a rhetorical question, obviously. But… is it a good amount? A bad amount?

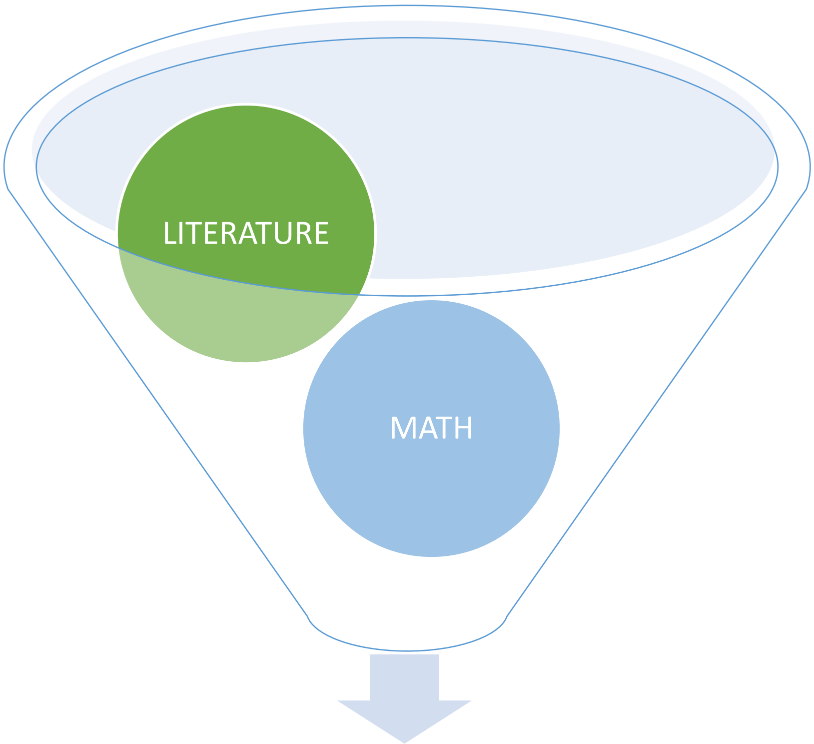
How do you even know?

How many hours do you need to work in a week in order to make enough money to pay your bills?

It's fairly basic math, but you need to know how to work with multiplication, variables, and time in order to know how much money you're making. If you just work and work and hope that you have enough money in your paycheck to cover your life… things aren't going to be easy.

Especially once you're working on a budget, it becomes necessary to know how much money you need to make in a day, or in a week, or in an hour to support your lifestyle.

EXAMPLE 8: MATH IN OTHER SCHOOL SUBJECTS



Mastering basic arithmetic can enable students to better understand poetry.

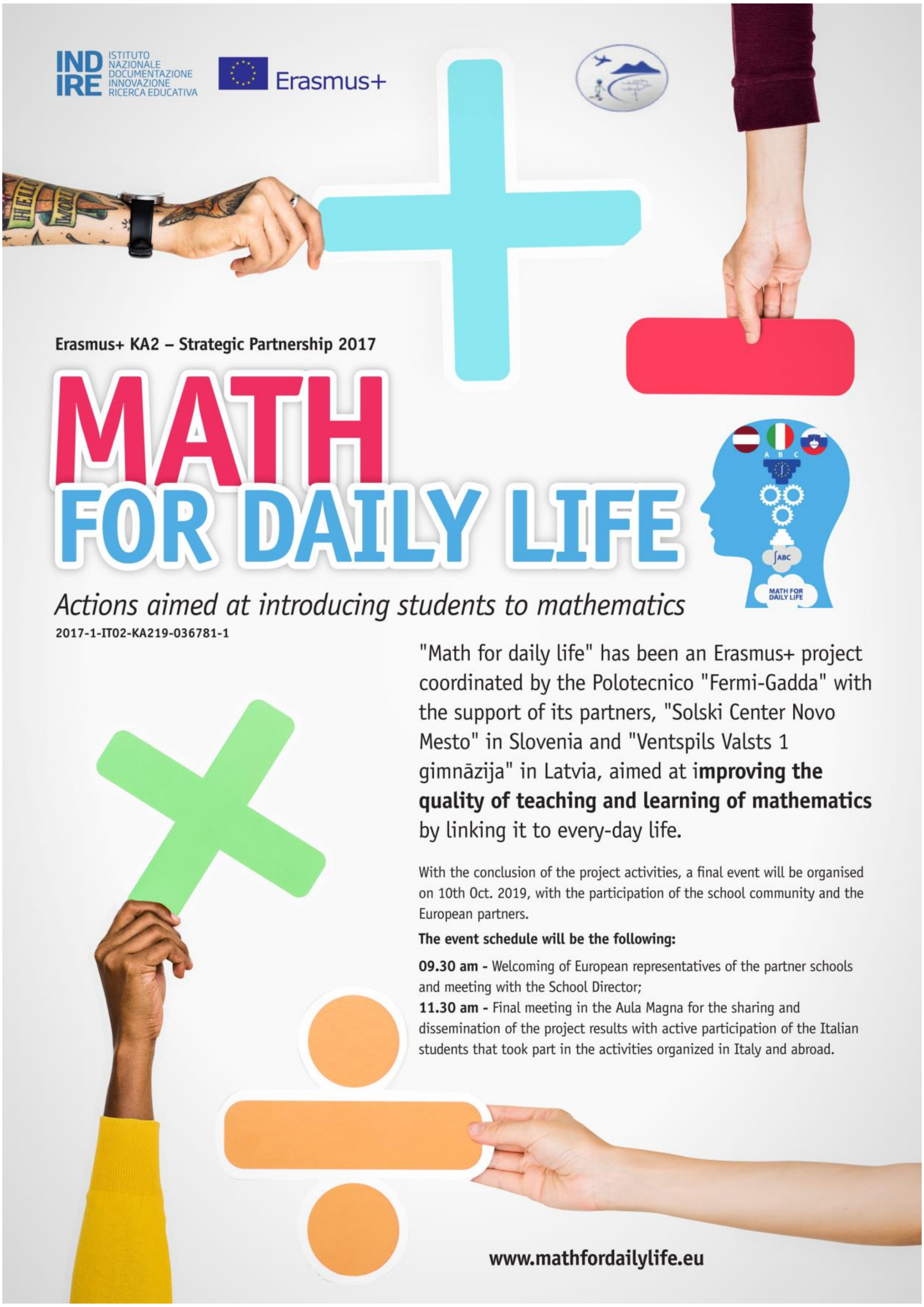
The meter of poetry, the number of words to include in a line and the effect that certain rhythms have on the reader are all products of mathematical calculations.

EXAMPLE 9: MATH AND ART

EXAMPLE 10: HAIRCUT

A haircut is more than just knowing how to use a pair of scissors. Understanding angles, lengths and shapes are key math's concepts that are the most important part of getting a haircut right.

Understanding quantities is an important part of any hairdresser's job, particularly when it comes to color treatments. To select the right developer and measure the right proportion of products to get the results your client wants, knowing how volume and ratios work is essential.



INDIRE
ISTITUTO NAZIONALE DOCUMENTAZIONE INNOVAZIONE RICERCA EDUCATIVA
Erasmus+
Erasmus+ KA2 – Strategic Partnership 2017
MATH
FOR DAILY LIFE
Actions aimed at introducing students to mathematics
2017-1-IT02-KA219-036781-1
"Math for daily life" has been an Erasmus+ project coordinated by the Polotecnico "Fermi-Gadda" with the support of its partners, "Solski Center Novo Mesto" in Slovenia and "Ventspils Valsts 1 gimnāzija" in Latvia, aimed at **improving the quality of teaching and learning of mathematics** by linking it to every-day life.
With the conclusion of the project activities, a final event will be organised on 10th Oct. 2019, with the participation of the school community and the European partners.
The event schedule will be the following:
09.30 am - Welcoming of European representatives of the partner schools and meeting with the School Director;
11.30 am - Final meeting in the Aula Magna for the sharing and dissemination of the project results with active participation of the Italian students that took part in the activities organized in Italy and abroad.
MATH FOR DAILY LIFE
www.mathfordailylife.eu