

STARI GRAD KRAPINA

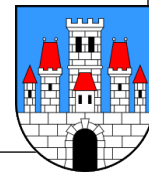
Projekt učenika Srednje škole Krapina

Općenito o gradu Krapini

- grad u sjeverozapadnoj Hrvatskoj
- središte Krapinsko-zagorske županije
- 12 479 stanovnika



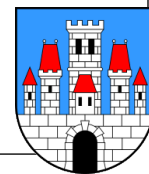
Panorama grada



- grad Krapina od velike je povijesne važnosti te je jedno od ključnih središta feudalnog razdoblja na tlu Hrvatske
- na prijelazu iz 16. u 17. st održano je 5 važnih sastanka Sabora u Krapini
- poznati posjetitelji:
 - hrvatsko-ugarski kraljevi Bela III. i Bela IV
 - ban Ivan Drašković



Panorama grada



Muzej krapinskih neandertalaca

- Otvoren 2010. godine
- Geološka i paleontološka istraživanja pod vodstvom Dragutina Gorjanovića Krambergera krajem 19. stoljeća



Ulaz u muzej





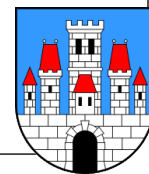
Unutrašnjost muzeja



Vremeplov

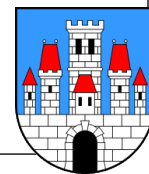


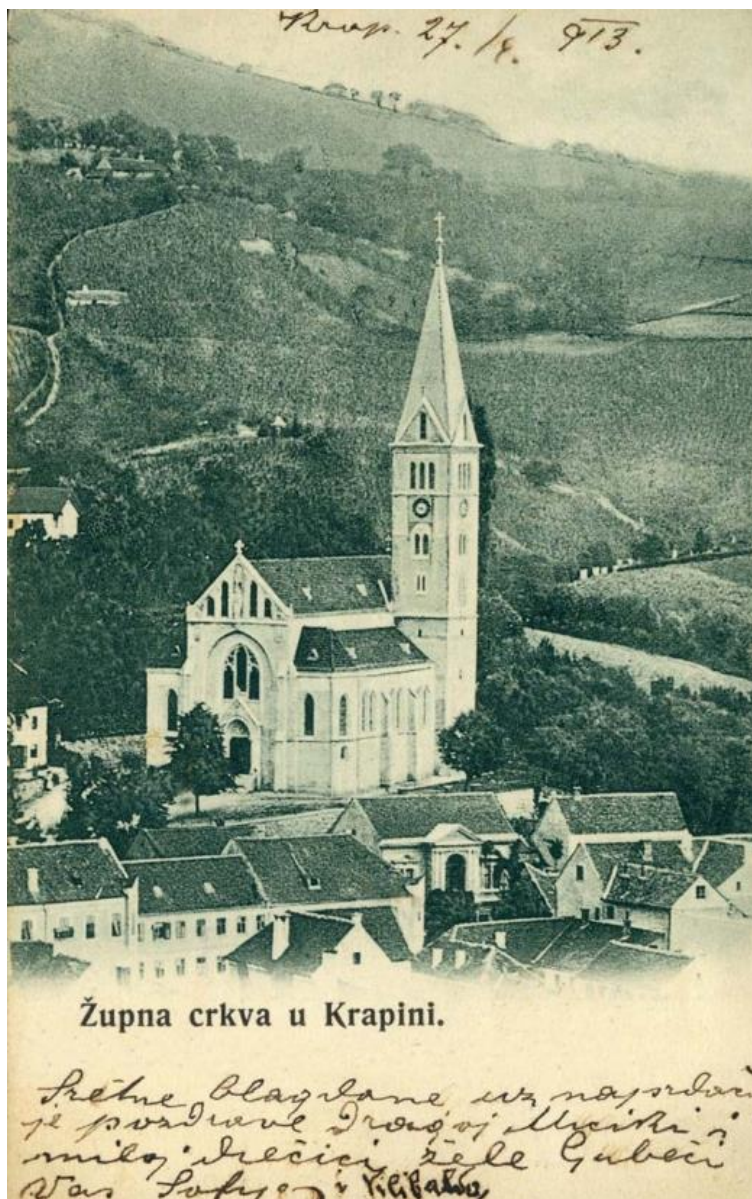
Trg Ljudevita Gaja



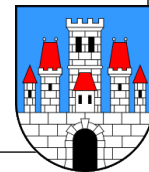


Panorama grada



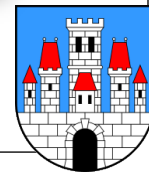


Crkva Sv. Nikole biskupa





Osnovna škola Ljudevit Gaj nekad i danas



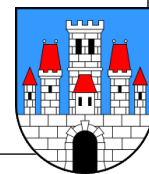


Panorama grada





Crkva Sv. Nikole biskupa





Trg Ljudevita Gaja



Stari grad Krapina

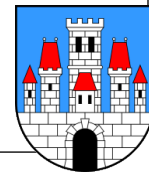


Legenda

- Na tri brijega nad mjestom Krapinom bijahu tri grada:
Psar, Šabac, Krapina
- Njima su vladali Čeh, Leh i Meh
- U to vrijeme su izbijali sukobi s Rimljanima
- Sestra Vilina je imala ljubavnu aferu s Rimskim poglavarom i odala braćine planove



Zgrada Starog grada

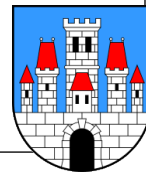


- Braća su uspjela pobjeći, te u povratku zarobili sestru i zazidali je u zidine

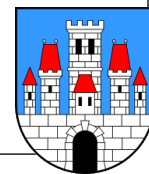
- U legendi se spominje kožnati viseći most koji je povezivao Stari Grad i Psar



Viktor Mihajlovič Vasnjecov- Bogatyri



- Je li taj most uistinu postojao ili je to tek još jedna od narodnih priča?
- Je li to uopće moguće ili most niti nije mogao biti konstruiran na tom području?



Ispitivanje temperature i proučavanje jačine vjetra

KRAPINA KL		SREDNJE MJESECNE I GODISNJE TEMP. ZRAKA											
god	JAN	FEB	MAR	APR	MAJ	JUN	JUL	AUG	SEP	OKT	NOV	DEC	sred
1981	-2.1	0.7	8.6	10.7	14.7	18.6	19.5	19.5	16.6	12.3	4.3	0.4	10.3
zbroj	-2.1	0.7	8.6	10.7	14.7	18.6	19.5	19.5	16.6	12.3	4.3	0.4	10.3
sred	-2.1	0.7	8.6	10.7	14.7	18.6	19.5	19.5	16.6	12.3	4.3	0.4	10.3
std	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
maks	-2.1	0.7	8.6	10.7	14.7	18.6	19.5	19.5	16.6	12.3	4.3	0.4	10.3
god	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981
min	-2.1	0.7	8.6	10.7	14.7	18.6	19.5	19.5	16.6	12.3	4.3	0.4	10.3
god	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981
ampl	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
♀													
KRAPINA KL		PREGLED APSOLUTNIH MAKSIMALNIH TEMP.											
god	JAN	FEB	MAR	APR	MAJ	JUN	JUL	AUG	SEP	OKT	NOV	DEC	maks
1981	9.2	12.2	22.3	23.7	28.2	31.2	30.8	32.4	28.5	25.0	18.6	15.5	32.4
maks	9.2	12.2	22.3	23.7	28.2	31.2	30.8	32.4	28.5	25.0	18.6	15.5	32.4



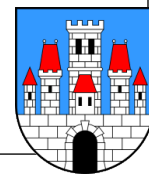
- 2015.g – srednja temperatura: 12.58 °C
- 1981.g – srednja temperatura: 10.32 °C
 - 2015 g -1981 g = 34 g
 - 12.58°C - 10.32°C = 2.26 °C

$$12.58 - \frac{12.58 * p}{100} = 10.32$$

$$0.1258 * p = -2.26$$

$$p = -17.97$$

→ Temperatura se za 34 g povečala za skoro 18%



Što bi bilo da se temperatura linearno povećava?

Točke:

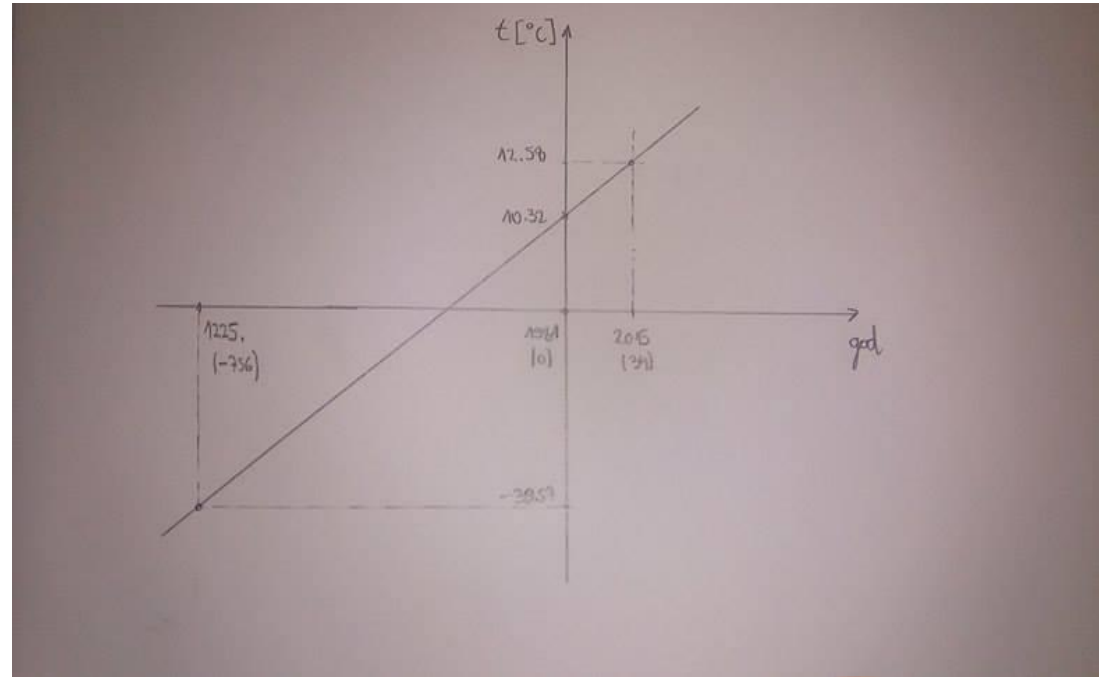
2015 (34, 12.58)

1981 (0, 10.32)

$$y - 12.58 = \frac{10.32 - 12.58}{0 - 34} (x - 34)$$

$$y - 12.58 = 0.066 (x - 34)$$

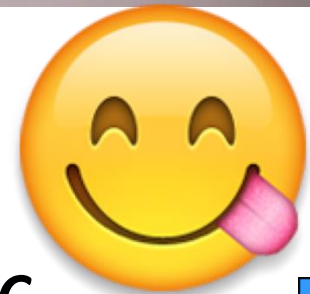
$$y = 0.066x + 10.32$$



Točka 1225 (-756, 0)

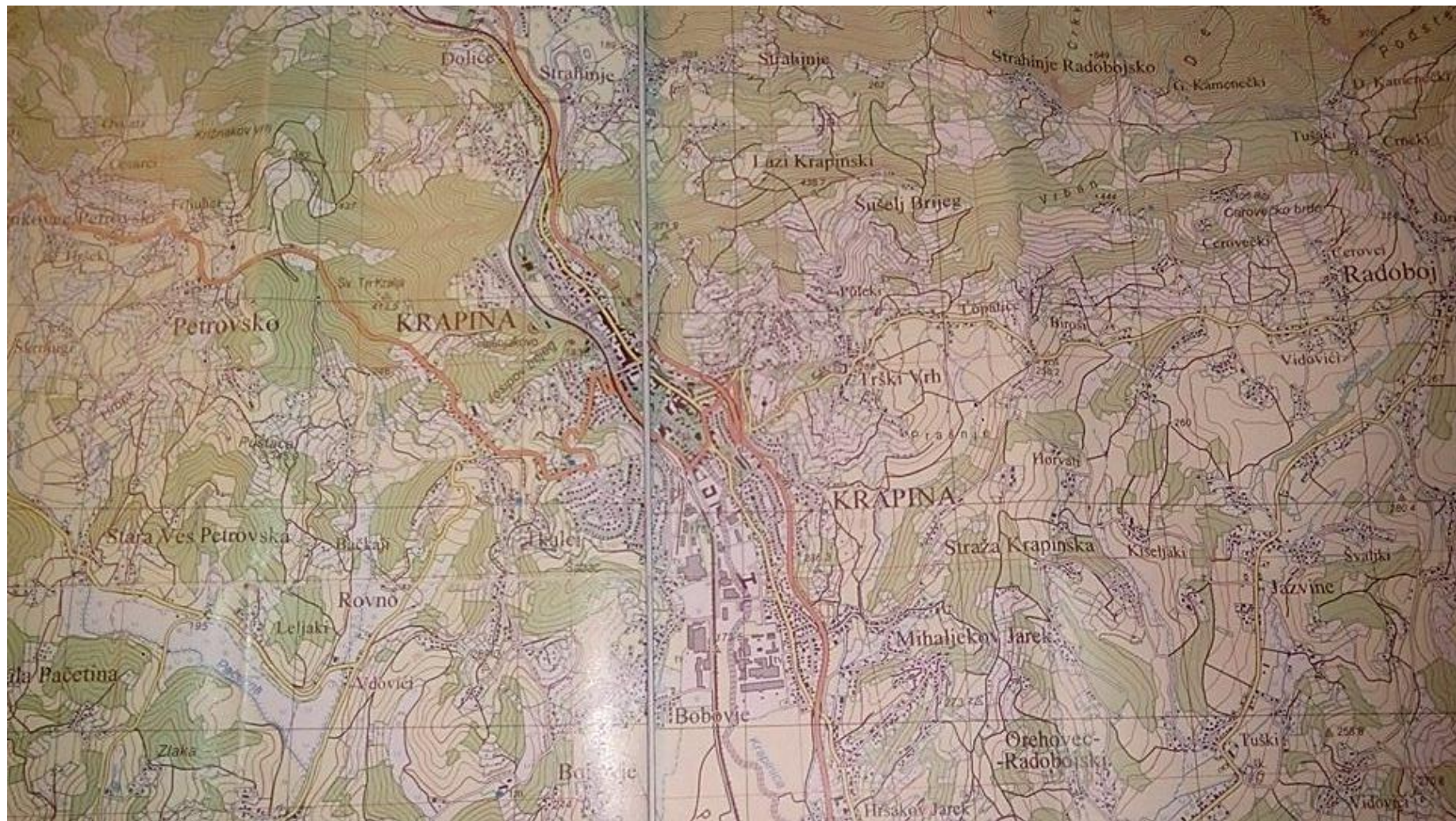
$$y = 0.066 * (-756) + 10.32 = -49.896 + 10.32 = -39.57$$

Prije 790 godina prosječna temperatura je bila **-39.57°C**

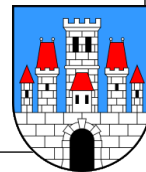


Mjerenje nadmorske visine





Topografske karte Krapine i Đurmanca



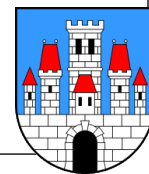


Zidine Staroga grada





Pogled prema Starom gradu s brda Josipovac



FRANJO BARUN OTTENFELS
VLASNIK STAROG GRADA I OKOLIŠNOG
ZEMLJIŠTA VELIKODUŠNO DAROVAO JE
OVU HISTORIJSKU GRADINU
OPĆINI SLOB. I KR. POVELJENOG
TRGOVIŠTA KRAPINE GODINE 1919
BILA MU HVALA I USPOMENA VJEČNA.

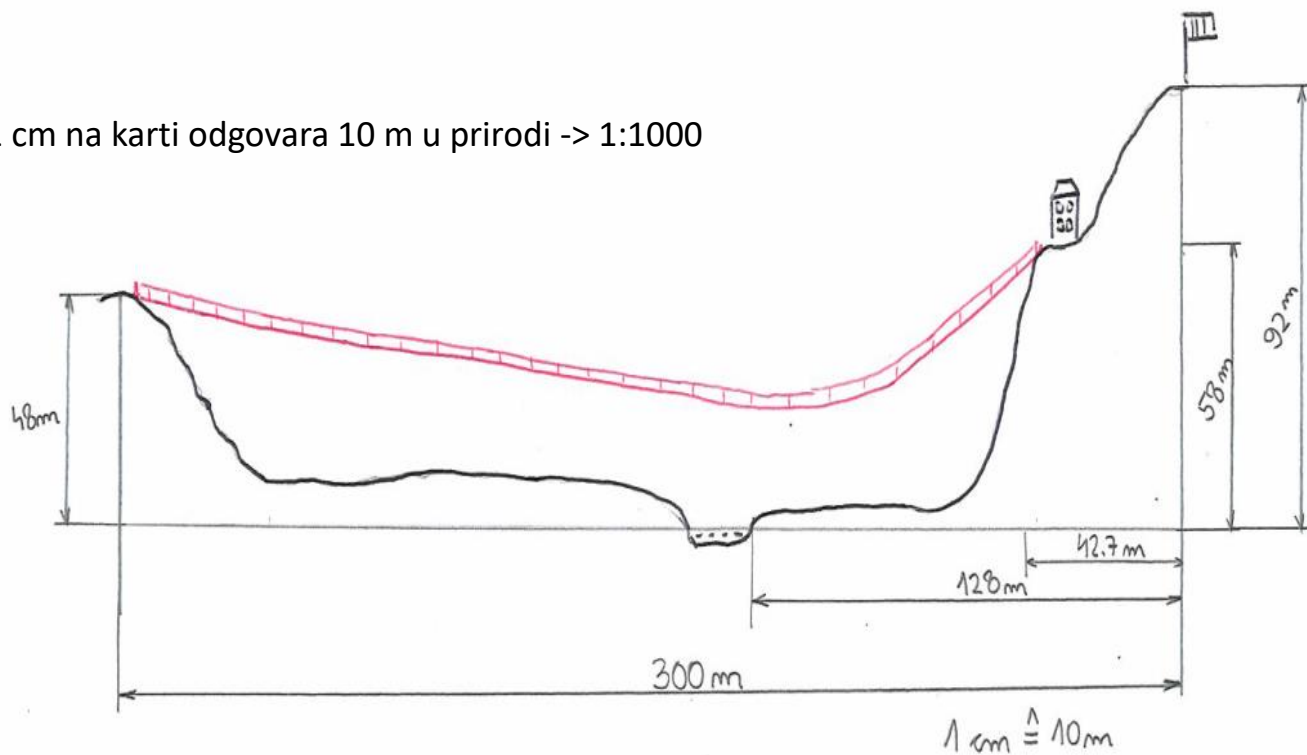
OBILJEŽJE POVIJESNIH LOKALITETA
PSAR - JOSIPOVAC

DRUŠTVO PRIJATELJA
GRADA KRAPINE 2004

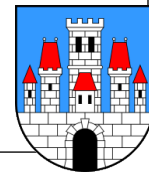
Spomen ploče



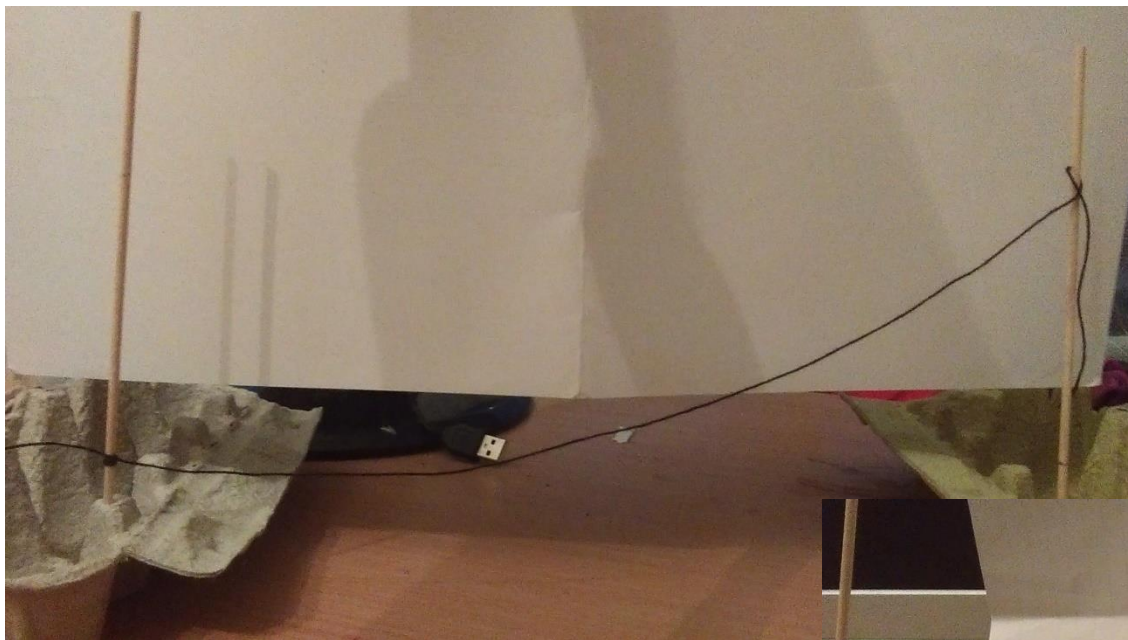
1 cm na karti odgovara 10 m u prirodi -> 1:1000



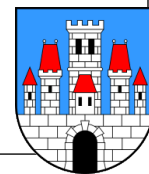
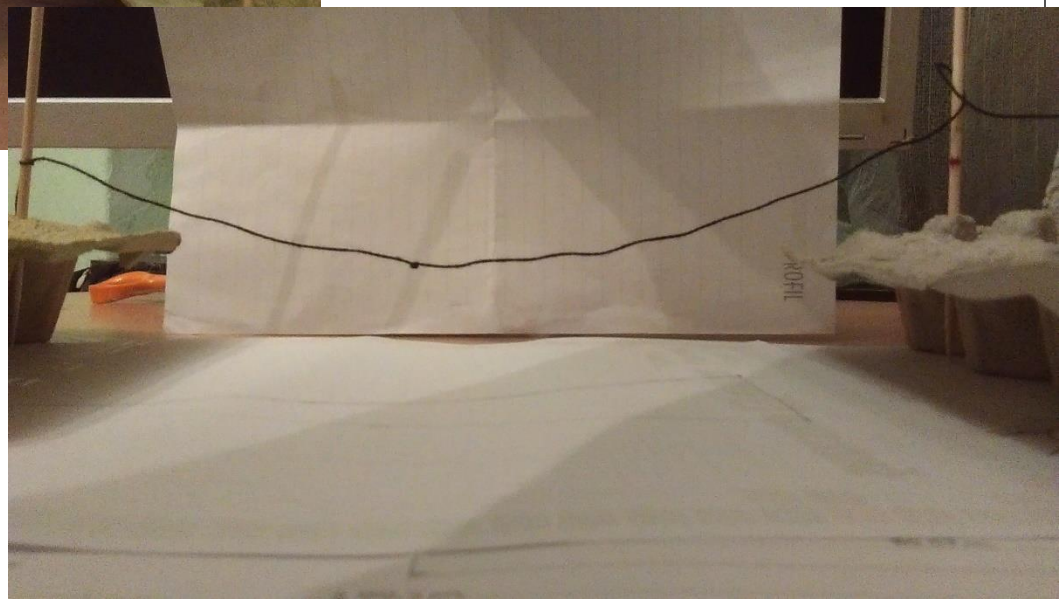
Vertikalan presjek prema topografskim kartama i idejna skica mosta

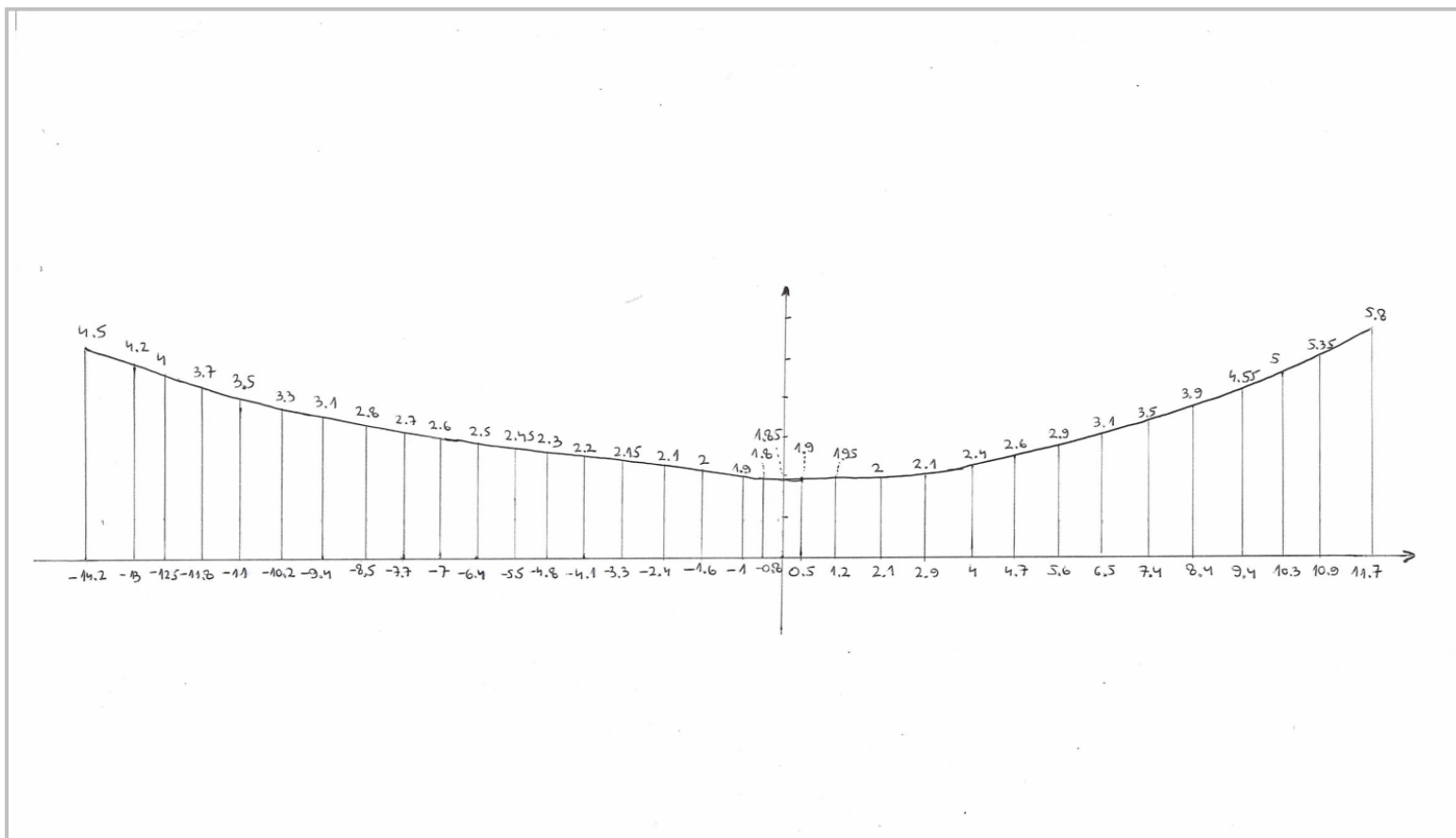


Konstruiranje mosta

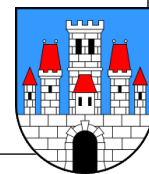


Nepovoljni i povoljni položaj mosta

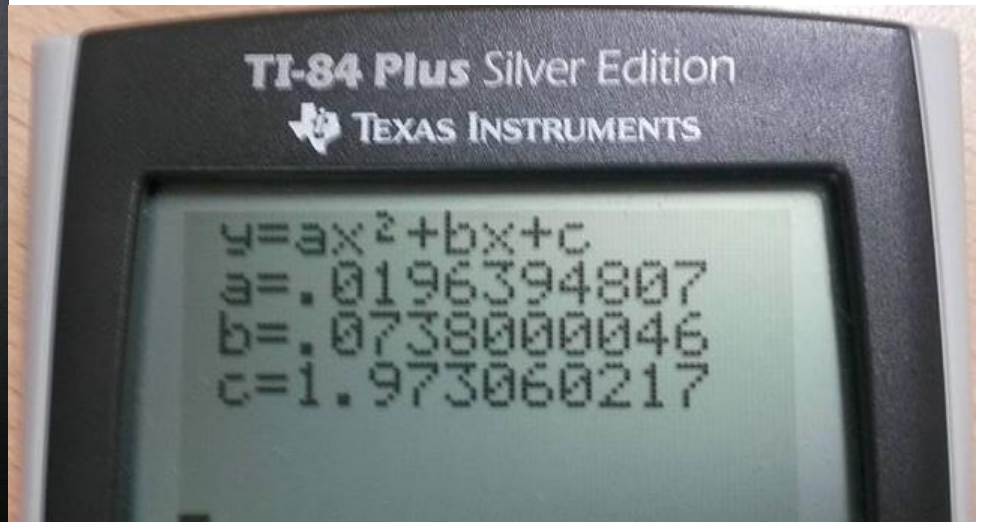
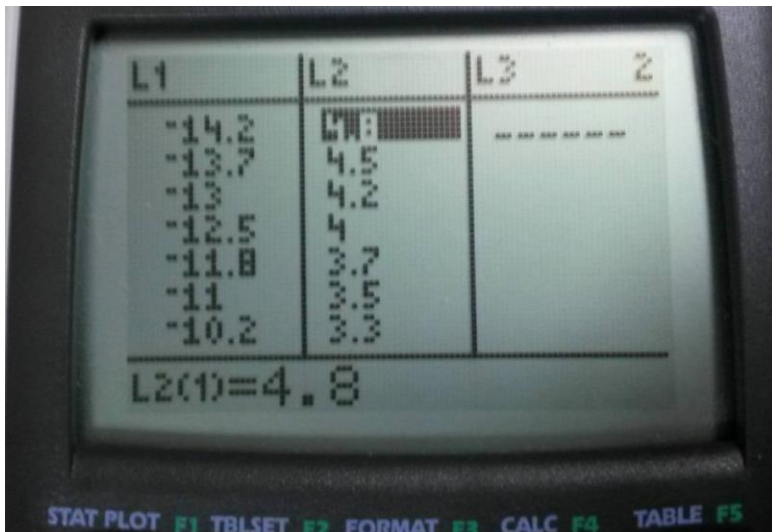




Skica mosta u koordinatnom sustavu

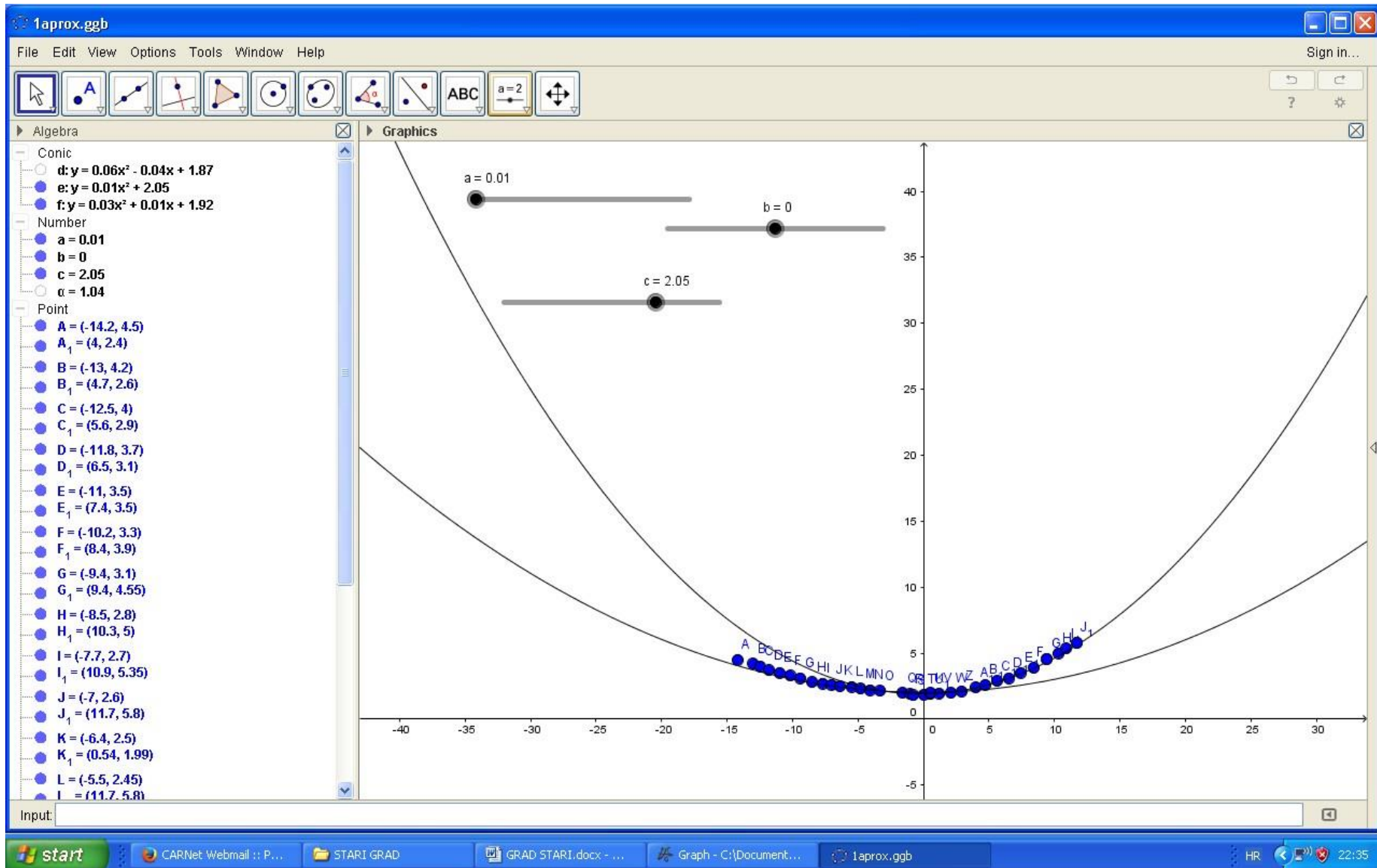


Prikaz koordinata točka mosta na
grafičkom kalkulatoru



$$y = 0.196x^2 + 0.738x + 1.973$$





Funkcija prikazana u Geogebri



Duljina mosta

- Izmjerili duljinu konca -> 28 cm

- Mjerilo

- $\frac{1 \text{ cm}}{10 \text{ m}} = \frac{28 \text{ cm}}{x}$ $x = \frac{10 \text{ m} * 28}{1} = 280 \text{ m} = 28\,000 \text{ cm}$

- Prosječan korak čovjeka iznosi 60 cm. Čovjek u 7 s napravi 10 koraka. Koliko je vremena potrebno da prijeđe most?
- U 7 s je prešao put od 420 cm

- $\frac{420 \text{ cm}}{7 \text{ s}} = \frac{28\,000 \text{ cm}}{t}$ $t = \frac{28\,000 * 7 \text{ s}}{420} = 466.67 \text{ s} = 7.778 \text{ min}$

=7 min 47 s



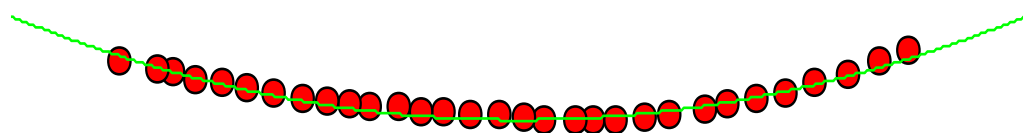
Calculate length of path ✕

From:

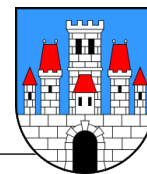
To:

Length:

Series 1
 $f(x) = -0.0185 \cdot x^2 + 0.0678 \cdot x + 2.0132$; $R^2 = 0.9672$

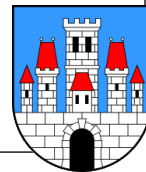


Duljine izmjerene u GRAPH-u



Izrada makete

- mjerilo 1:1000 (na x-osi), 1:200 (na y-osi)
- brdo Psar izgrađeno je od 4 sloja (iz topografske karte uzete su 4 izohipse), a brdo Stari grad od 5 sloja
- duljina mosta 280m
- dimenzije makete : 50 × 100 × 25cm



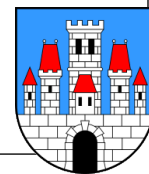
Materijal potreban za izradu makete

- 5 stiropora 50×100cm
- 2l tempere
- 1 lak
- 5 silikonskih štapića za pištolj
- 5m kožnih traka 2mm širine
- 43 daščice dimenzije 33 × 7 × 1mm



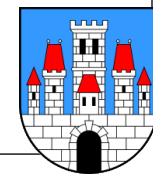


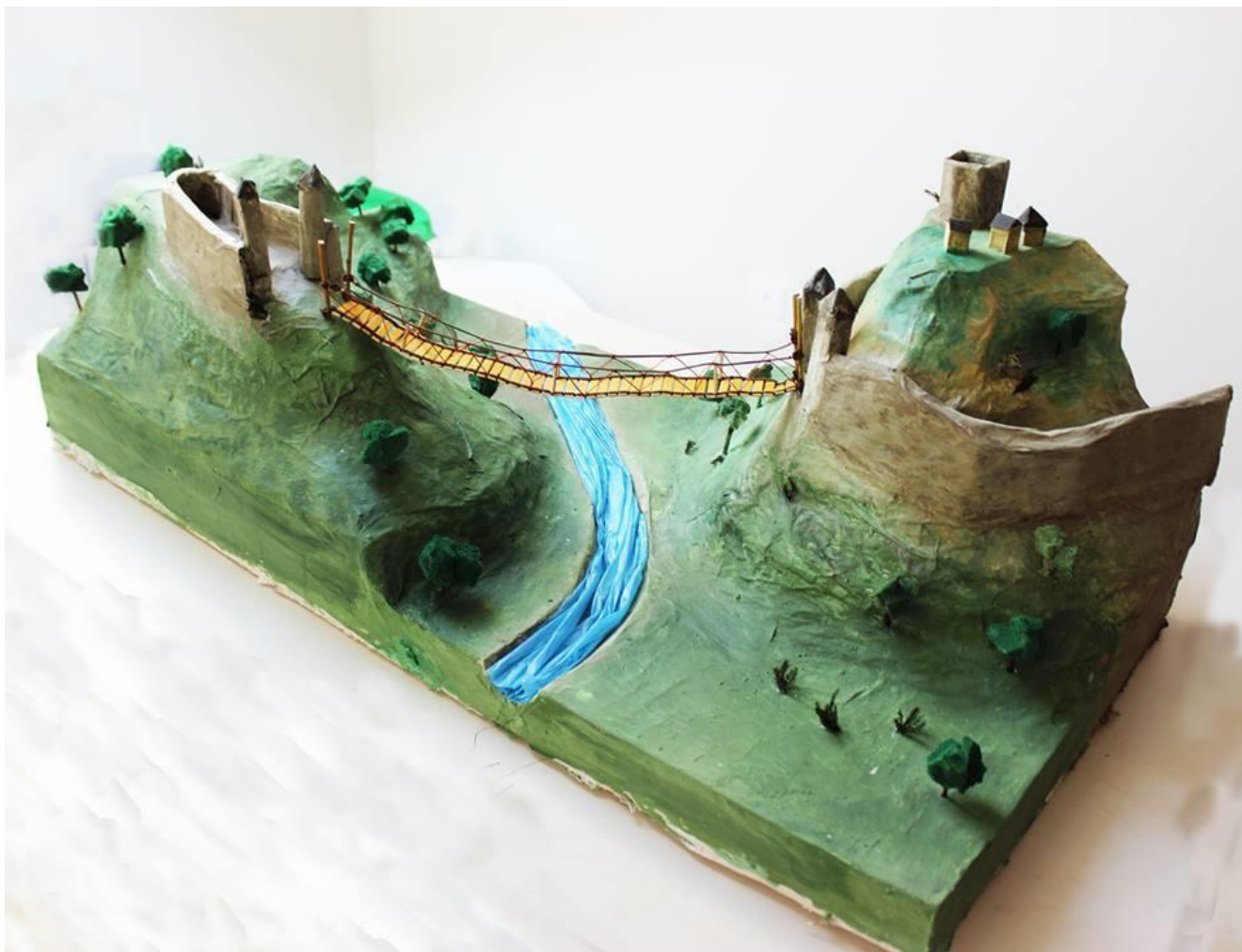
Izrada makete



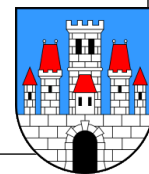


Izrada makete





Konačan izgled makete



Hvala na pažnji!



Učenici:

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