



Preca College Korçë

Mathematics Entrance Exam

7th June 2025

Time: 8:00 – 10:00

Name: _____

Registration number: _____

INSTRUCTIONS TO CANDIDATES

- Answer all the questions in the space provided.
- Show all your working.

Q.1 Simplify : *Thjeshtoni*. (10 marks)

(i) $2(y - 5) + y(y^2 - 2)$

(ii) $\frac{4x-12}{6x^2-18x}$

(iii) $\left(x^2 y^{\frac{2}{3}} \times x y^{\frac{1}{3}} \right) \div x^{\frac{3}{2}} y^{\frac{1}{2}}$

Q.2. Solve these equations: *Zgjidhni ekuacionet.* (10 marks)

(i) $\frac{11x-5}{4} = 18$

(ii) $4^{2x-15} = 1$

(iii) $3^{4x-5} = \frac{1}{9}$

Q.3. (10 marks)

(i) Make 'x' the subject, *veçoni 'x'*

$$3x - gb = y - ax$$

(ii) Make 'M' subject, *veçoni* 'M'

$$T = 2\pi\sqrt{\frac{L}{M}}$$

(iii) Make 'w' subject, *veçoni* 'w'

$$C = \sqrt{\frac{w}{w+a}}$$

Q.4. Find the value of; *gjeni vlerën*. (10 marks)

(i) $4^2 + 4^{-1} - 4^0$

(ii) Find the value of 'p': *gjeni vlerën e 'p'-it*: if

$$\frac{2p-3}{5} - \frac{p-5}{2} = \frac{3}{10}$$

(iii) The following is a set of numbers with a median (*mesorja*) = 6.

5, 13, 4, 2, 20, x. What is the value of 'x'. *Gjeni vlerën e 'x' - it.*

Q.5 Solve the system of equations: *zgjdhni sistemet.* (10 marks)

$$\frac{3}{4}x + \frac{1}{5}y = 4$$

$$\frac{1}{2}x - \frac{3}{5}y = -1$$

Q.6. (7 marks)

In a class of 25 students, $\frac{2}{5}$ are Boys; the rest are Girls. The mean weight: *pesha mesatare*; of the Boys in the class is 78kg and the average weight: *pesha mesatare*; of the Girls is 55kg.

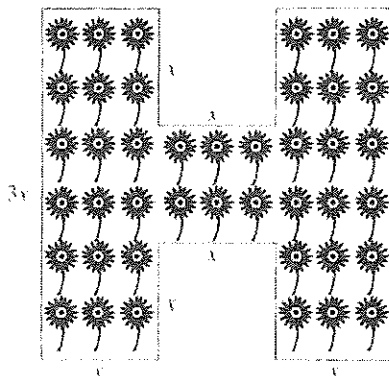
(i) Find the average (*mesatarja*) weight of ***all the students*** in class.

One student left the class. The ***new average*** weight for the whole class is now 63.5 kg.

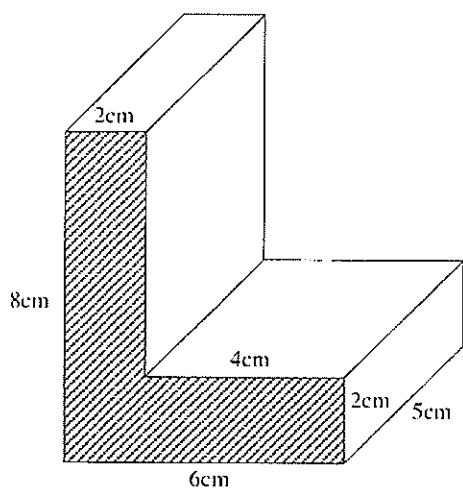
(ii) What was the weight of the student who left the class?

Q.8. (8 marks)

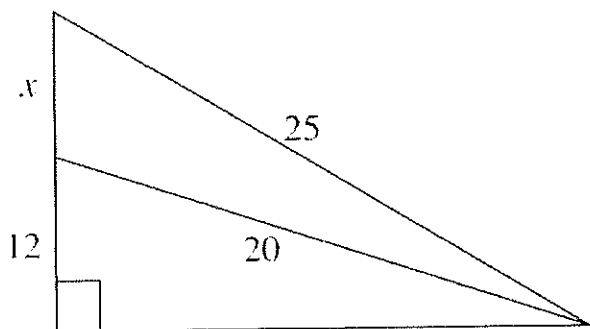
(a) The given diagram represents a flower bed; *lulishtje*; in a garden. The area; *sipërfaqe*; of the flower bed is 112 m^2 . Find the value; *gjeni vlerën*; of 'x'.



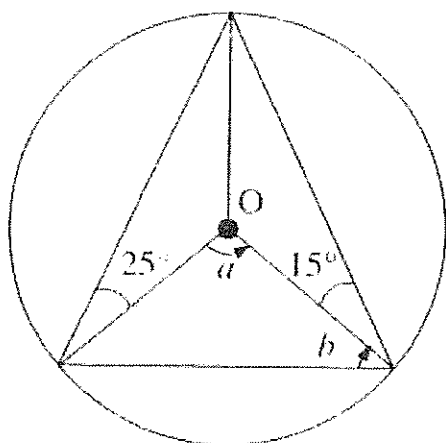
(b) Find the volume; *vëllim*; of the prism; *prizëm*.



Q.9. (8 marks) Find the value of 'x' in cm. *Gjeni vlerën e 'x' – it.*



Find the angles: *kënde 'a' , 'b'*. Point 'O' is the centre of the circle.



Q.10. (12 marks)

A young people's orchestra has 60 members. 60% of them are Boys; the rest are Girls. One fourth ($1/4$) of the boys and one third ($1/3$) of the girls have curly hair; *kaçurrel*. The rest have straight hair: *flokë të drejtë*.

Use this information to fill the table below. Show your calculations.

		Curly Hair	Straight Hair
	Number of Boys		
	Number of Girls		

(a) If **one person** is chosen at random: *rastësisht*: what is the probability that the person is:

(i) A boy with straight hair

(ii) A girl with curly hair

(iii) **A boy or a girl** with curly hair

(iv) **Not a boy** with straight hair

(b) If **two persons** are chosen at random; *rastësisht*; **one after the other**; what is the probability of them being:

(v) **The first**: a boy with curly hair **and the second**: a girl with straight hair?

Q.11. (8 marks)

A restaurant employs 20 waiters:*kamerierë*; during the summer season. Some of them are full- time and some of them are part-time workers. Full-timers are paid €35 each day and the part-timers are paid €20 each day. The owner of the restaurant pays €565 each day in salaries. How many of the waiters are:

- (i) Full timers?
- (ii) Part-timers?

Good Luck; End of Paper