



**Preca College Korçë**

Mathematics Entrance Exam

4<sup>th</sup> June 2022

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.** (10 marks) Solve the equations: Zgjidhni ekuacionin:

a.  $7a - 4 = 2a - 3.$

b.  $7(3a - 1) = 56.$

c.  $\frac{11-x}{5} = 3x - 1.$

d.  $(3x - 1)(2x - 5) = 0.$

**Q.2.** (9 marks) Find the value of: Gjeni vlerën:

a.  $4p^2 - 9p$  when  $p = -2$

b.  $3^2 + 3^{-1} - 3^0$

c. Find the value of K: Gjeni vlerën e K-it:

$$5^K \times 5^2 = 1.$$

**Q.3.** (8 marks) Simplify: Thjeshtoni:

a.  $\frac{16p^4}{4p^3}$

b.  $\frac{6x+24}{x+4}$

c.  $\frac{6x^2}{2x^8} \times \frac{4x^9}{3x^{-2}}$

**Q.4.** (9 marks) Evaluate : Kryeni Veprimet:

a.  $\sqrt{2} \times \sqrt{32}$

b.  $\sqrt{3} \times \sqrt{27}$

c.  $\sqrt{\frac{11}{3}} \times \sqrt{\frac{12}{11}}$

**Q.5.** (7 marks) Solve the simultaneous equations: Zgjidhni sisteme ekuacionesh:

$$2x + 5y = 27$$

$$4x - 2y = 6$$

**Q.6.** (7 marks) Genta is a mother and has three children; Pamela (7 years old), Dritan (10 years old) and Roberta (13 years old). The Mother wants to divide the sum of € 480 among her children, in the ratio of their ages (në përpjesëtim me moshën e tyre). How much does each child receive?

**Q.7.a.** (8 marks) A computer is priced (vlerësuar) at €816. A discount (skonto) of 25% is given on this computer. What is the new price (çmimi) of the computer?

b. The price (çmimi) of a television is € 540, which includes (përfshirë) 20% TVSH. Find the cost (kosto) of the television excluding (pa) TVSH.

- c. If the TVSH rate is decreased (pakësohet) to 15%, what would be the new price (çmimi) of the television?

**Q.8.** ( 7 marks ) The table below (tabela më poshtë) shows the number of goals scored in 40 football matches (ndeshja futbollit).

Number of goals scored	Number of games played
0	9
1	10
2	15
3	4
4	2

- a. Find the mode (moda) number of goals in a match?
- b. Find the total number of goals scored in these 40 matches?
- c. Find the mean (mesatarja) number of goals per match.
- d. Find the median (mesorja) number of goals.

**Q.9.a.** ( 8 marks ) Twelve (12) workers can finish a job in 10 hours. How long does it take 8 workers to finish the same job?

b. The mean weight (peshë mesatar) of 6 rugby players is 90 kg and the mean weight of 4 ballet dancers is 45 kg. Find the mean weight (peshë mesatar) of the 10 persons altogether.

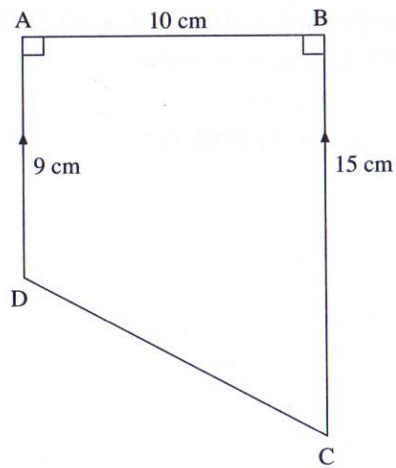
c. A water container (enë) weighs (peshon) 2kg 750g when full. The same container weighs 1kg 650g when half ( $\frac{1}{2}$ ) full. Find the weight of the empty container.

**Q.10.** (10 marks) The table below (tabela më poshtë) shows the membership (anëtarësi) in a youth club (klub i të rinj).

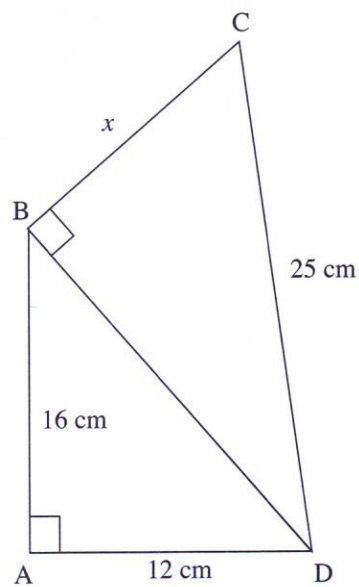
	Under 16 years	16 years and over
Males: <i>Meshkuj</i>	18	26
Females: <i>Femra</i>	21	25

- a. How many members (anëtarë ) are under 16 years old?
  
- b. How many members are females?
  
- c. How many are the members of the club, altogether?
  
- d. A member is chosen (zgjedhur) at random (rastësisht). What is the probability that the member is:
  - (i) A female?
  
  - (ii) Under 16 years?
  
  - (iii) Male and 16 years or over?

**Q.11.a.**(10 marks) Find the area (sipërfaqje) of the trapezium (trapez) ABCD and the length (gjatësi) of the side (brinjë) DC.

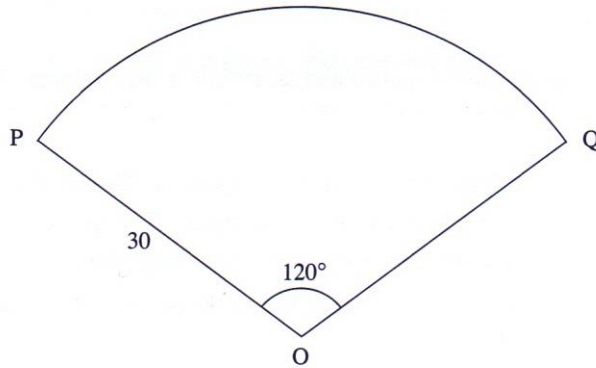


b. Find the length of 'x' in triangle BCD. Find also the area (sipërfaqje) of ABCD.





- Q.12.** ( 7 marks ) OPQ is a plot of land (truall) in the shape (trajtë) of a sector (sektor). The length (gjatësi) of OP = 30 m.



- Calculate (gjeni) the length of the arc (harku) PQ.
- Calculate the area (sipërfaqje) of the sector OPQ.
- The plot OPQ is surrounded (rrethuar) by a fence (gardh) which costs (kushton) ten euro (€10) per metre. What is the cost (kosto) of the surrounding fence?

Good Luck – End of Paper