



Preca College Korçë
Mathematics Entrance Exam
29th June 2018
Time: 8:00 - 10:00

Name: _____

Index number: _____

INSTRUCTIONS TO CANDIDATES

*** Answer all questions.**

*** Do all your working in the space provided next to each question.**

Q1 In the following equations, find the value of 'x'.

(6 marks)

a. $5x + 9 = 24$

b. $3(x + 5) = 9$

Q2 Expand and simplify the following.

(6 marks)

a. $2(a - 1) + 3(a + 1)$

b. $5(x - y) - 2(x + y)$

Q3 Simplify the following:

(4 marks)

a. $\frac{a^6b^6}{a^2b^3}$

b. $\frac{4a^4b}{2ab}$

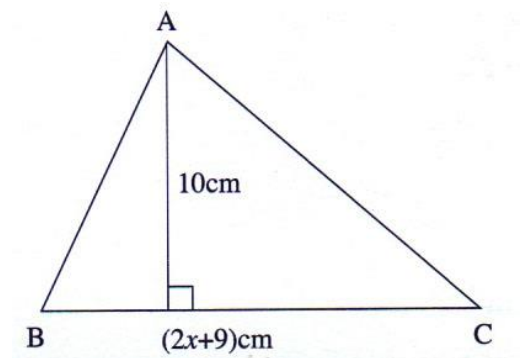
Q4 Find the values of 'x' in the following equations.

(7 marks)

a. $3x^2 = 48$

b. $(x - 1)^2 = 16$

Q5 In the given diagram the area of the triangle **ABC** is 85 cm^2 . Find the value of x . (6 marks)



Q6 A father is now three times as old as his son. Six years ago he was five times as old. How old is the son now? (8 marks)

Q7 Work out the value of the following. Show your steps.

(9 marks)

a. $(27)^{\frac{1}{3}}$

b. $(9)^{\frac{3}{2}}$

c. $(8)^{\frac{2}{3}}$

Q8 Find the value of 'x' in each of the following equations.

(10 marks)

a. $3^x = 9$

b. $5^x = 125$

c. $2^{x-1} = \frac{1}{8}$

Q9 a. If $f(x) = 5x - 1$, calculate: $f(0)$ $f(-1)$ $f(-2)$

(12 marks)

b. For the function $f(x) = 2^x$, evaluate: $f(0)$ $f(1)$ $f(2)$

Q. 10 Find the gradient of each of the lines joining the points **A** and **B**:

(10 marks)

a. $A = (6, 5)$ $B = (3, 2)$.

b. $A = (4, 0)$ $B = (1, 2)$.

c. Find the equation of the line with gradient m and passing through point **P**.

$m = 5$ $P = (1, 7)$

Q11 In a hotel, a swimming- pool takes 36 hours to be filled by 3 pumps.

(6 marks)

a. How long would it take to be filled by 8 pumps?

b. How many pumps are needed to fill the pool in 9 hours?

Q12 A ball is picked at random from a bag containing 2 white balls, 3 black balls and 5 green balls.

Find the probability of picking:

(6 marks)

- a. A **white** ball

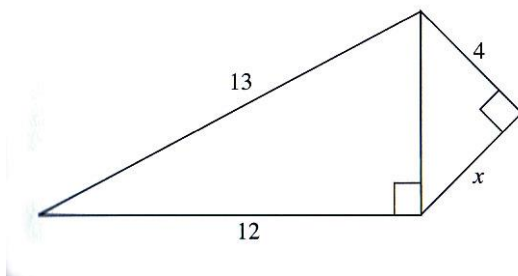
- b. A ball that is **not black**

- c. A ball that is **either** white, black or green.

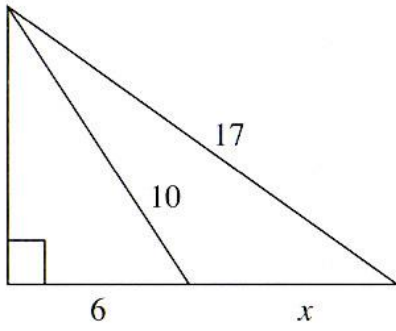
Q13 In the following figures find the sides marked x . All the given dimensions are in cm.

(5 marks)

a.



b.

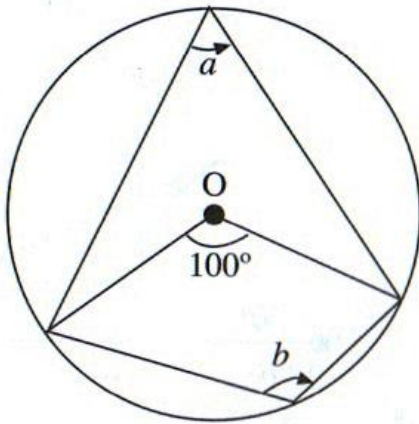


Q14 In the following circles the center of the circle is denoted by the letter **O**.

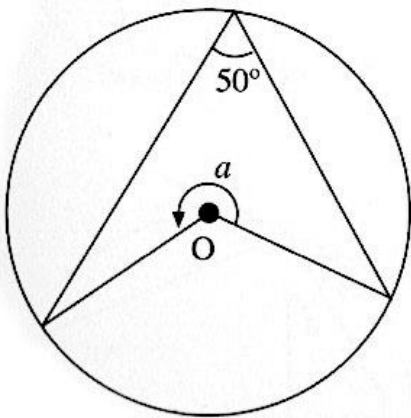
Find the angles marked in small letters.

(4 marks)

a.



b.



GOOD LUCK TO ALL