THE GRAMMAR SCHOOL

ENTRANCE EXAMINATIONS

22 MARCH 2021

SUBJECT :	MATHEMATICS
TIME :	1 HOUR AND 15 MINUTES

Instructions to students.

1. Write your number on the first page.

2. You are not allowed to use any kind of a calculator.

3. Using a pen is preferable, but if you wish you can use a pencil.

4. Correction fluid (tippex) or tape is not allowed

5. You are not allowed to talk to one another.

6. Read the instructions of each question carefully.

7. If you don't know a question, go to the next one.

8. Show all the workings.

9. The examination consists of 16 questions and you must answer **ALL** of them.

10. The total number of marks is 100.

1. Evaluate the following.

(a) $5 + 200 \div (50 - 10 \times 3) =$

Answer: _____ (4)

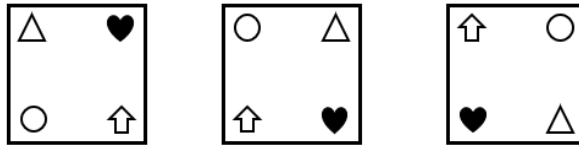(b) $2\frac{2}{3} \div 4 + \frac{5}{6} =$

Answer: _____ (4)

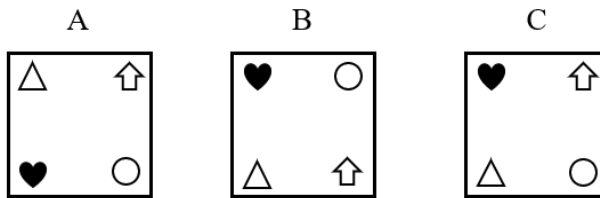(c) $1.5 \times 4 - 3\frac{3}{5} \times \frac{1}{3} =$

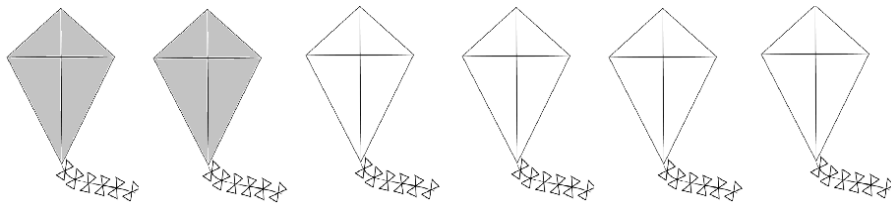Answer: _____ (4)

(Total 12 Marks)

2. (a)

Which shape from below (A, B, C) follows the above pattern?
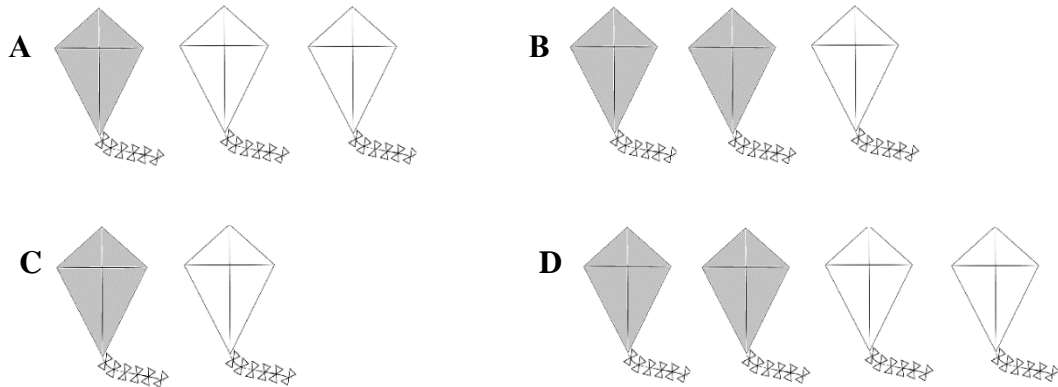
A   B   C

Answer: _____ (2)

(b) In the following diagram, some of the kites are shaded.

Which of the following (A, B, C, D) has an equivalent fraction of shaded kites?

A   B

C   D

Answer: _____ (2)

(Total 4 Marks)

3. In order to finish a painting, Matina will have to work eight hours per day for 6 days in a row.

   If she wants to finish the painting in two days fewer, how many hours per day will she have to work?

   Answer: _____ (4)

   (Total 4 Marks)

4. Buses depart from Nicosia to Limassol every 25 minutes and for Pafos every one hour. At 6 a.m. two buses depart from Nicosia, one for Limassol and the other one for Pafos.

   Find the next exact time when two buses will depart simultaneously from Nicosia for these two towns.

   Answer: _____ (5)

   (Total 5 Marks)

5. Evi and Vicky have 2 kilograms of sugar in total and each one of them will make a cake. Evi needs 750 grams of sugar while Vicky needs $\frac{3}{5}$ of a kilogram of sugar.

How many grams of sugar will be left over?

Answer: _____ (4)

(Total 4 Marks)

6. There are 56 children at a party of which 22 are girls. From the girls, 10 are having a juice and the remaining a soft drink. From the boys, 16 are having a juice and the remaining a soft drink.

If we randomly select a child, what is the probability that this child

(a) will be a boy,

Answer: _____(2)

(b) is having a juice,

Answer: _____(2)

(c) is having water?

Answer: _____(1)

(Total 5 Marks)

7. An airplane passed over country A towards country B travelling with a constant speed in a straight line. After passing country A it covered $\frac{4}{7}$ of this distance in 3 hours and 16 minutes.

In how many extra hours and minutes will it pass over country B?

Answer: _____ hours _____ minutes (6)

(Total 6 Marks)
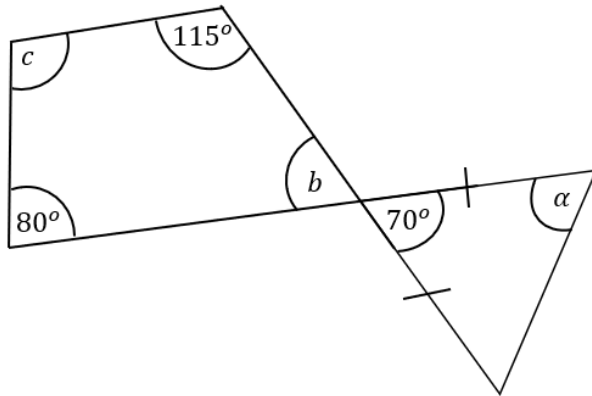
8. How many triangles are there in the following shape?
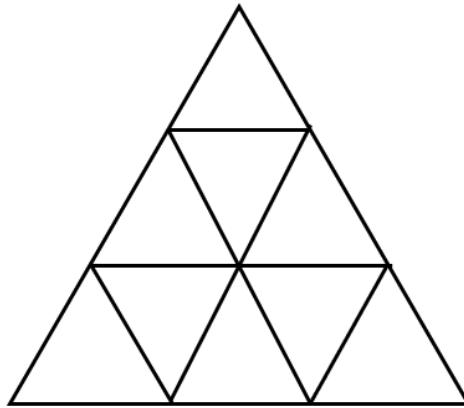
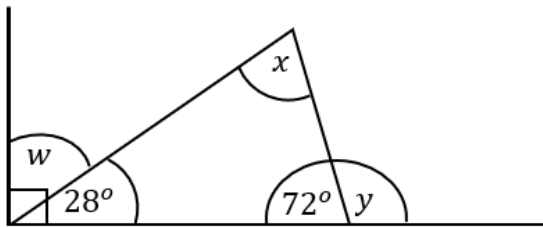Answer: _____ (3)

(Total 3 Marks)

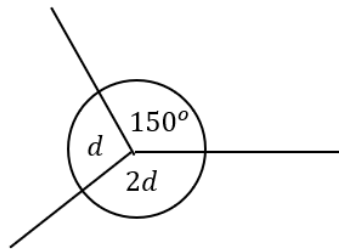9. Find the angles marked with letters.

(a)

Answer: $a =$ _____ , $b =$ _____ , $c =$ _____ (3)

(b)

Answer: $w =$ _____ , $x =$ _____ , $y =$ _____ (3)

(c)

Answer: $d =$ _____ (3)

(Total 9 Marks)

10. George bought eight plates for €4.50 each and four cups each of equal price. He paid with a €50 note and got €8 change.

How much did he pay for each cup?

Answer: _____ (5)

(Total 5 Marks)

11. If $\frac{2}{5}$ of the students of a class are girls and the boys of the class are 12, what is the total number of students of the class?

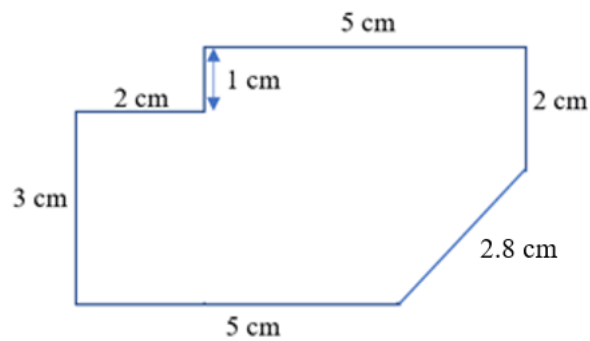Answer: _____ (3)

(Total 3 Marks)

12. The price of a plot of land decreased by 10% from 2018 to 2019 and then increased by 20% from 2019 to 2020. The price of the plot of land was €40 000 in 2018.

Find its price in 2020.

Answer: _____ (6)

(Total 6 Marks)

13.

5 cm

1 cm

2 cm

2 cm

3 cm

2.8 cm

5 cm

For the shape given above, find
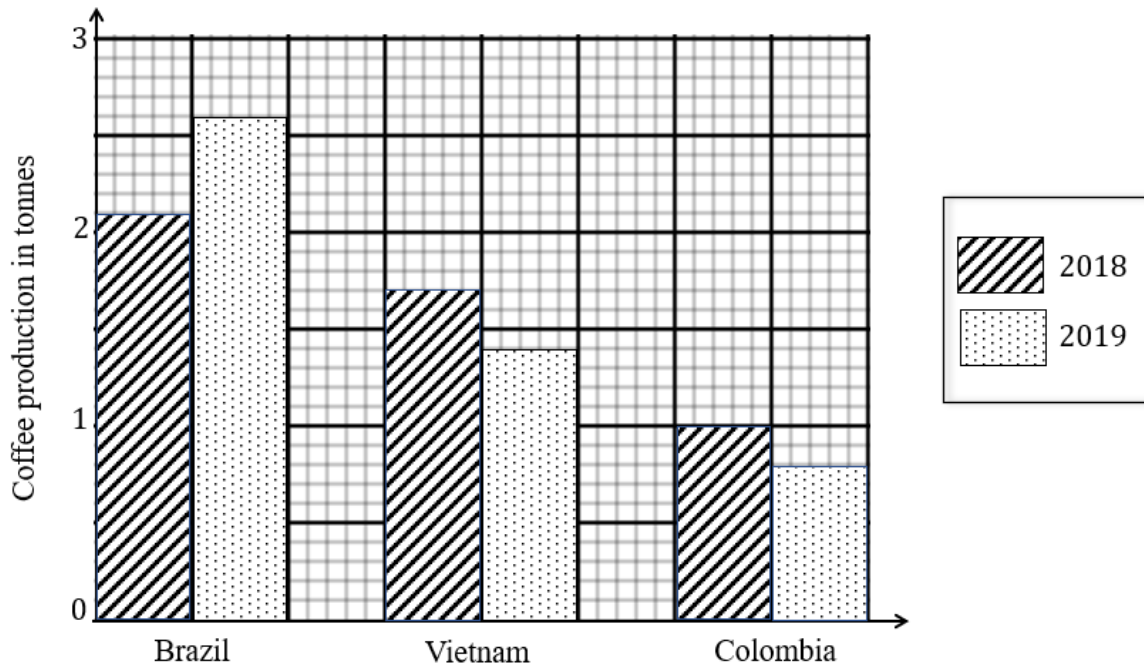
(a) the perimeter,

Answer:_____ (3)

(b) the area.

Answer:_____ (8)

(Total 11 Marks)

14. The three countries with the greatest coffee production are Brazil, Vietnam and Colombia. The bar chart that is given below gives the coffee production, in tonnes, by these countries in 2018 and 2019.

(a) How many tonnes of coffee were produced in total by Vietnam during these two years?

Answer: _____ (3)

(b) In which country was the greatest decrease in the production of coffee noted from 2018 to 2019?

Answer: _____ (2)

(c) What is the percentage decrease in the production of coffee noted in Colombia from 2018 to 2019?

Answer: _____ (2)

(δ) How many tonnes of coffee were produced in total by these three countries in 2019?

Answer: _____ (3)

(Total 10 Marks)

15. Harry is a member of a basketball team. Up until this moment he participated in 5 games of the season. In the first three games he scored 6, 8 and 12 points respectively, while in the last two games he scored a total of 14 points.

    (a) What is the average number of points Harry scored in these five games?

                                        Answer: _____ (4)

    (b) How many points does Harry have to score in the sixth game so that the average number of points for the first six games will be 10?

                                        Answer: _____ (3)

(Total 7 Marks)

16. Christopher bought 1200 kilograms of grapes at 30 cents per kilogram. He used 80% of the grapes to make wine that he bottled. Hε threw the remaining grapes away because they were unsuitable. He needed 6 kilograms of grapes for each bottle of wine and the cost for the production with the bottling of wine was €2.50 per bottle.

Find the total cost for Christopher.

                                        Answer: _____ (6)

(Total 6 Marks)

END