| Department of Education – Western Province
Practice Paper |
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| GCE (O.L) Examination – 2020 |
| Mathematics 1   Duration: 2 Hrs |
| Instructions: ***Answer all the questions on this paper itself*** |

Part A

Questions from 1-25 carry 2 mark (1+1) each

01. The marked price of an article is Rs 30 000/= If 10% on marked price is levied as VAT, what is the selling price of the article inclusive of VAT?
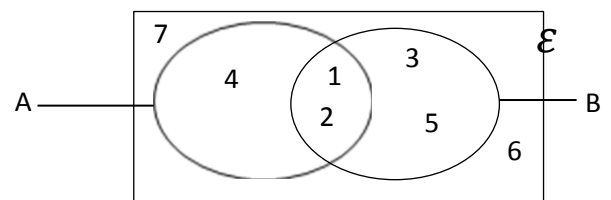
02. Solve for x, $(2x - 1)(x + 3) = 0$

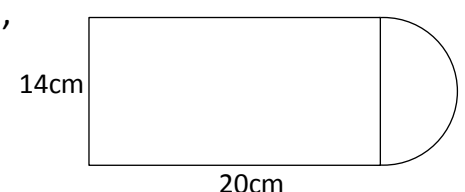03. According to the information given, find the value of x in the illustration.
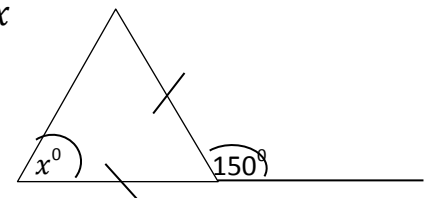
04. Simplify, $\dfrac{1}{3x} + \dfrac{1}{5x}$

05. In the Venn diagram given write down the set A'∩ B' element wise.

06. Find the LCM of the two expressions, $3ab, 6a^2$

07. According the given measurements in the illustration, which comprises of a rectangle and a semi-circle find the perimeter of the composite figure.


14cm

20cm

08. The stock of food available in a hostel is sufficient for 20 inmates for 7 days. If 8 more students are admitted to the hostel on the same day, how many days the stock of food available is now sufficient for all the inmates?

09. O is the centre of the circle shown.
Find the magnitude of the angle denoted by x
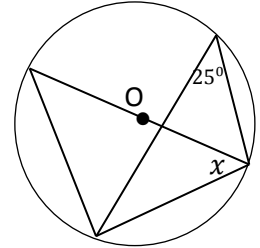
10. What is the gradient of the straight line which passes through the points with co-ordinates, (2, 3) and (4, 6)

11. According the given information in the figure, find the magnitude of the angle denoted by x
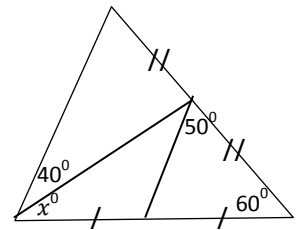
12. Two regular tetrahedral dice each carrying numbers from 1 to 4 on their faces are thrown together. What is the probability of obtaining two odd numbers on both dice?

13. According to the information given, find the value of DĈE
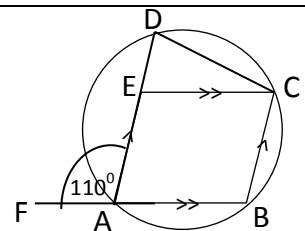
14. If $A = \begin{pmatrix} 2 & 0 \\ -1 & 1 \end{pmatrix}$ and $B = \begin{pmatrix} 1 \\ 3 \end{pmatrix}$, find the matrix AB

15. If $8.75 = 10^{0.942}$, evaluate $\lg 875$

16. The picture shows a semicircular laminar with centre O and radius $2r$. The laminar is folded so that the side OA coincides with the side OB to form a right circular cone with O being its apex. Find the area of the curved surface of the cone so made in terms of π and r
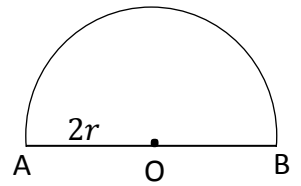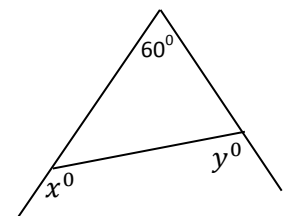

17. Factorise, $x^2 - 2ab + 2ax - bx$

18. P, Q, R and S are the mid points of the sides AB, BC, CD and DA of the given rhombus ABCD. The length of each side of the rhombus is 8cm and the diagonal, BD is 10cm long. Find the perimeter of the hexagon, PBQRDS
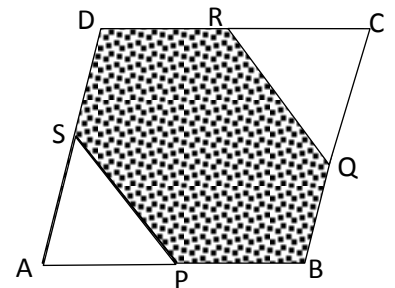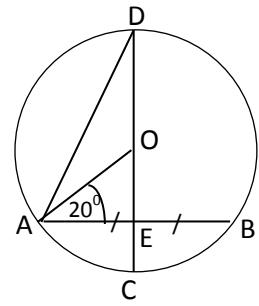

19. According to the information given, find the value of $x^0 + y^0$

20. Find the 9th term of the geometric progression of which first term is $\frac{1}{8}$ and the common ratio is 2.

21 The picture shows a circle with centre O. Using the given information, find the value of $A\hat{D}O$

22. The picture shows a cumulative frequency curve of marks obtained by a group of students for a practical test. Find the inter quartile range of the distribution.

No. of students
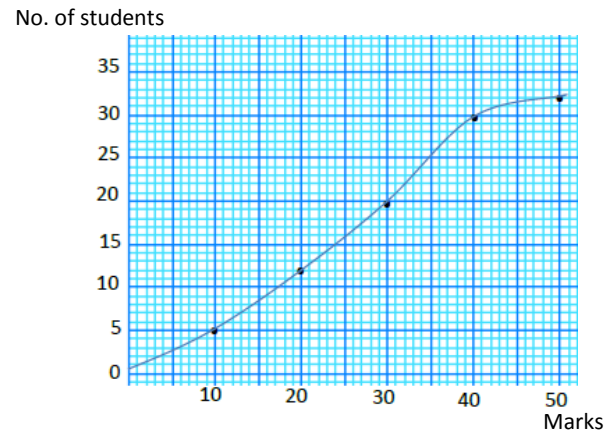
23. AB is a multi storey building. A person at point B sees a person at the point P with an angle of depression 60^0 and a person at point C in the building sees the person at point P with an angle of depression 40^0. Mark the given information on the illustration.
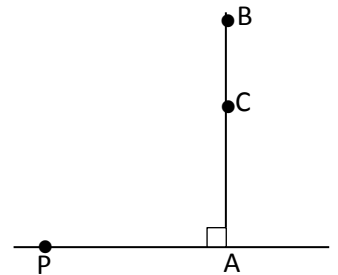
24. An incomplete construction work is shown here to locate the point which is equidistant from sides AB and BC of the ΔABC and 4cm away from the side AC. Draw a sketch to complete the construction to show the location of the point
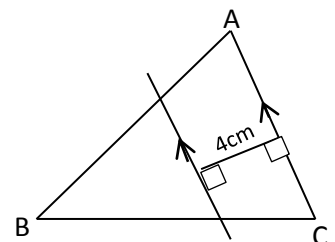
25. The distance time graph of a vehicle travelling in an express way is shown here. Find the average speed of the vehicle.

Distance (km)
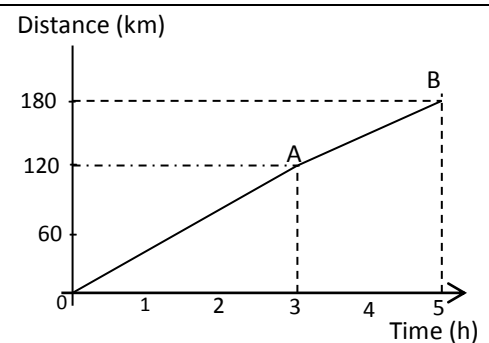
Part B

Answer all the questions on this paper itself

1. In a certain school 150 students are going to sit the GCE (OL) examination this year. $\frac{1}{5}$ of them have selected the subject dancing and $\frac{3}{8}$ of the remaining students have selected the subject music.

   i) What fraction of the students has selected subjects other than dancing out of whole students?

   ii) What fraction of students has selected music out of total students?

   iii) If all the other students who have not selected dancing and music have selected either art or drama, what fraction of the students has selected the subject art or drama out whole students?

   iv) If the number of students who have selected art was as two times as the dancing students, how many students have selected drama?

2. The picture shows a rectangular garden with a pond in the shape of a sector of a circle at a corner. Breadth of the land is 22m and the radius of the sector is 14m. Taking $\pi = \frac{22}{7}$
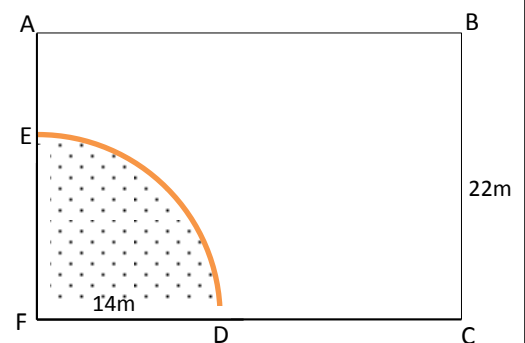

   i) Find the area of the pond.

ii) If the area of the garden without the pond is three times the area of the pond, find the length of the garden.

iii) Find the perimeter of the garden without the pond.

iv) If a flower bed with half the area of the pond is constructed inside the garden with BC being a boundary to it, find the breadth of the flower bed and draw a sketch of the flower bed showing it in the above illustration.

3. a) The table here gives information about the cost incurred in importing a motor vehicle.

Costing Category	Cost incurred
Import Price	Rs 800 000
Import Duty paid	Rs 400 000
Other Expenses	Rs 300 000

i) What is the percentage of import duty of this type of a vehicle?

ii) How much should the importer sell this vehicle at to make a 15% profit?

b) An investor deposits Rs 350 000 for two years in a bank account which pays 12% compound interest per annum

i) End of the first year how much will stand in full in his bank account?

ii) How much will he receive in full after two years

4. a) The histogram shows, how a group of students obtained marks for a certain subject in a test.

No of students
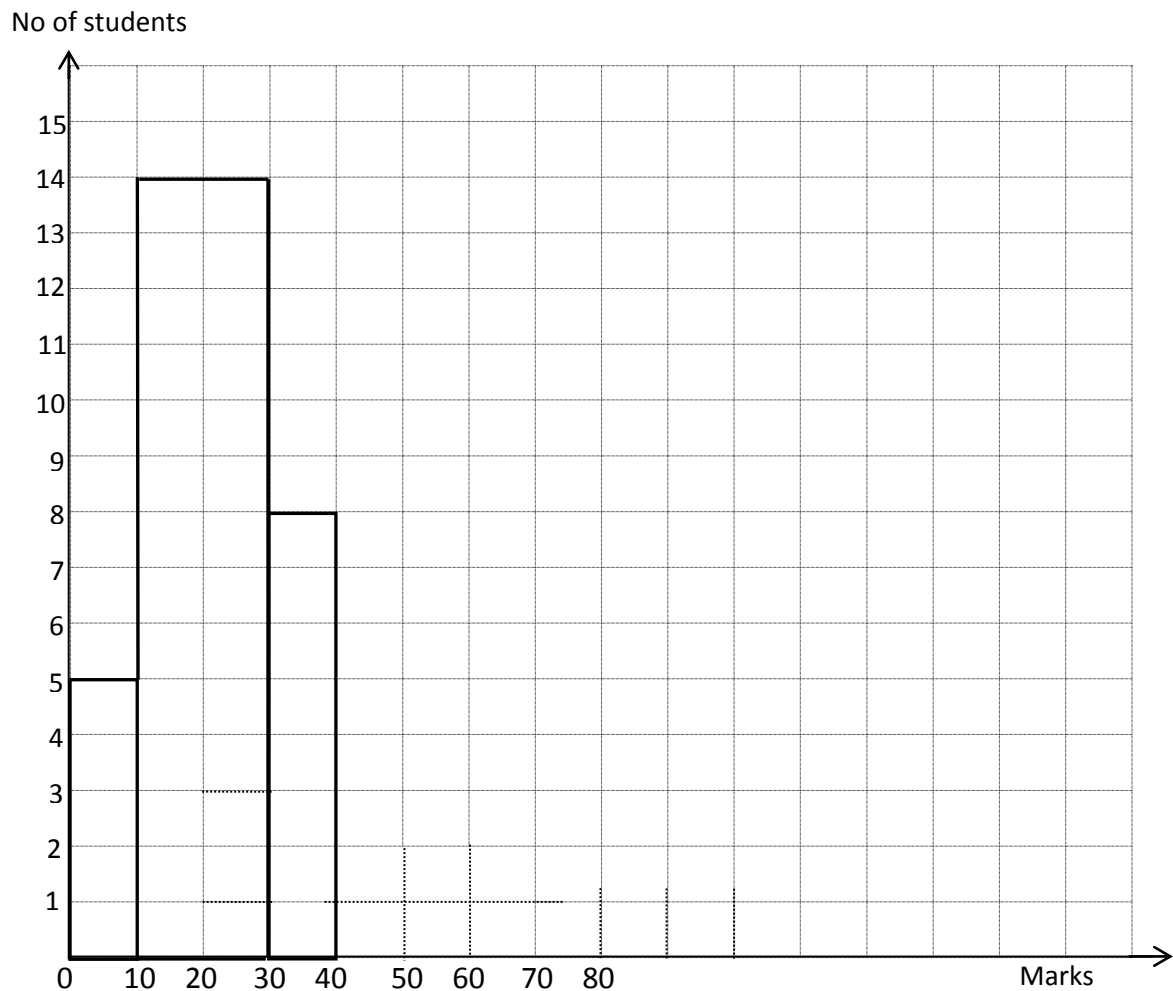
i) How many students have obtained marks between 10 and 30?

ii) If 9 students have obtained marks between 40 and 70, denote this information in the histogram.

iii) Draw the frequency polygon on the completed histogram.

b) The mass of each student in a group weighed to the nearest kilogram is given below. Work out the interquartile range of the data.

28, 31, 33, 37, 37, 38, 39, 40, 40

5. a) A contender playing in a game can proceed to the second round only if he wins the first round of the game. The probability that he loses the first round is $\frac{1}{3}$. Any contender who wins the first round has a probability of $\frac{3}{5}$ to win the second round too.

   i) Complete the given tree diagram pertaining to the first round of the game by writing the appropriate probabilities.
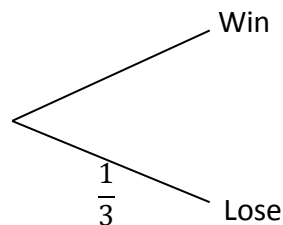
   ii) Extend the above tree diagram to the second round and mark the relevant probabilities on the respective branches.

   iii) What is the probability that a randomly selected contender wins both rounds?

   b) Among a group of children which comprises of 3 girls and 2 boys, one child is selected at random as the leader. The deputy is selected from the remaining children at random.

   i) Complete the following grid representing the total sample space of the event with marks "×". G_1, G_2 and G_3 represent girls and B_1 and B_2 represent boys in the group.

   ii) Highlight the event in the grid that represents a boy being selected as the leader and find its probability.

   iii) Find the probability that a girl is selected for one post.

Translated by: Anura Jayatillake