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 9

Second Term Test - 2018
 Mathematics

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Time : $2\frac{1}{2}$ Hrs

Part I

- Answer all questions in the paper itself.

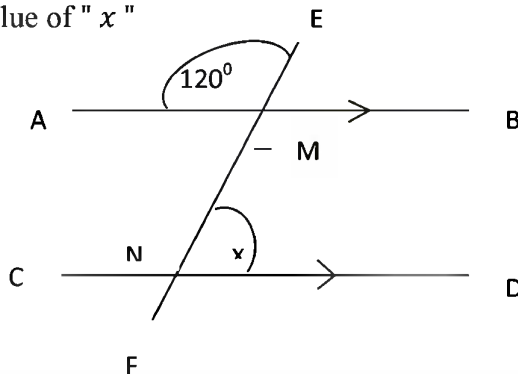
01. If the price of 5m of fabric clothes is Rs 650, find the price of 2m of fabric clothes.

02. Simplify, $1011_{two} + 110_{two}$

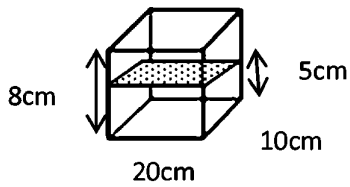
03. If a vendor buys an article for Rs 500 and sells it at Rs 350, determine the loss percentage.

04. Expand, $(x + 2)(x - 1)$

05. Find the value of " x "

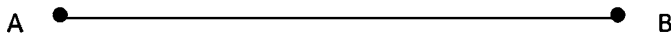


06. A cuboid shaped tank of height 8cm, Length 20cm and width 10cm, is filled up to a height of 5cm with water. Find the volume of water in the tank.



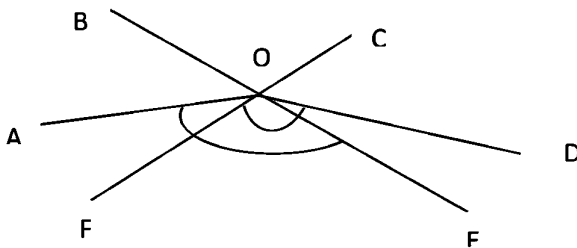
07. Solve, $3m - 1 = 5$

08. There is a suggestion to build a road equidistant from the houses A and B. Draw a rough sketch of the road using the knowledge of the basic loci.



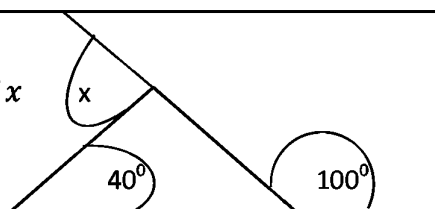
09. Piyal who hopes to visit America, converted Rs. 90 153 into American Dollar. How many American Dollars did he receive? (Exchange rate of one American Dollar is Rs 159)

10. If $\angle AOE = \angle FOD$, prove that $\angle AOF = \angle EOD$ using axioms.



11. Factorize, $1 - 36x^2$

12. Find the value of x



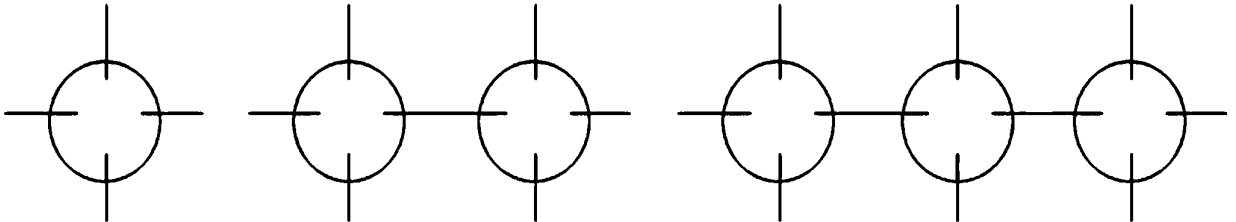
13. Father's age is three times son's age. If the son's age is x , 5 years later find the sum of son's age and father's age as an algebraic expression.
14. Indicate the order in which the keys of the calculator need to be pressed to get the correct answer of $253 + 47$.
15. Sunimal goes 5m toward North direction and then goes 12m toward the East direction. Find the shortest distance between started place and ended place.
16. Write 0.032 in scientific notation.
17. Make "r" the subject of the formula, $P = C \left(1 + \frac{r}{100}\right)$
18. Write down the function of the graph which is parallel to $y = 3x + 5$ and goes through (0, -1)
19. Evaluate, $(3^2)^2 + 5^0$
20. Express $0.5m^3$ in litres.

Part B

- Answer the first question and four other questions.

01.

- a) The following diagram shows a creation which has been created using clay balls and parts of ekels.



- Study the above creation and write down the number of ekels in the first three patterns respectively. (3 marks)
 - Find the number of ekels needed to create the next pattern. (1 mark)
 - Find the general term of the above creation according to the number of ekels. (2 marks)
 - On which pattern do we create using 31 ekels? (3 marks)
 - Show that 13th pattern has 4 times the number of ekels in the 3rd pattern. (3 marks)
- b)
- A discount of 7% is offered when a bicycle is purchased. If the marked price of the bicycle is Rs 18500, find the price of the bicycle after giving the discount. (2 marks)
 - A person paid a commission of 4% when he purchased a land. If he paid Rs 75 000 as commission, find the amount he sold the land. (2 marks)

02. The incomplete table is given below to draw the graph of the function $y = 3x - 2$

x	-2	-1	0	1	2	3
y	-8	1	4

- i. Fill in the blanks of the table (3 marks)
- ii. Draw the graph using the above coordinates. (3 marks)
- iii. Find the gradient and intercept of the graph which you have drawn. (2 marks)
- iv. Draw the straight line $x = 1$ in the above same coordinate plane and find the coordinates of the intersected point of the straight line $x = 1$ and the graph $y = 3x - 2$ (3 marks)

03. a) i. How much is $\frac{3}{4}$ of 1000 rupees? (2 marks)

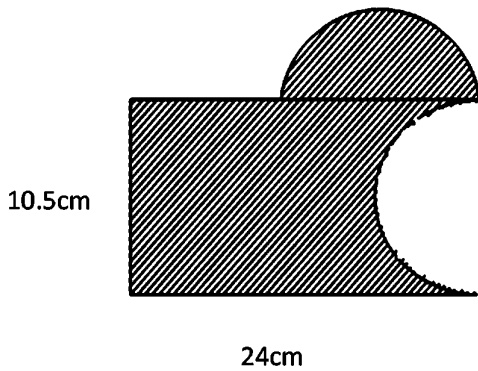
ii. Simplify, $3\frac{1}{3} \div (2\frac{1}{2} - 1\frac{1}{4})$ (3 marks)

b) A father gave $\frac{1}{3}$ of his land of 6 hectares to his wife and $\frac{1}{2}$ to his son.

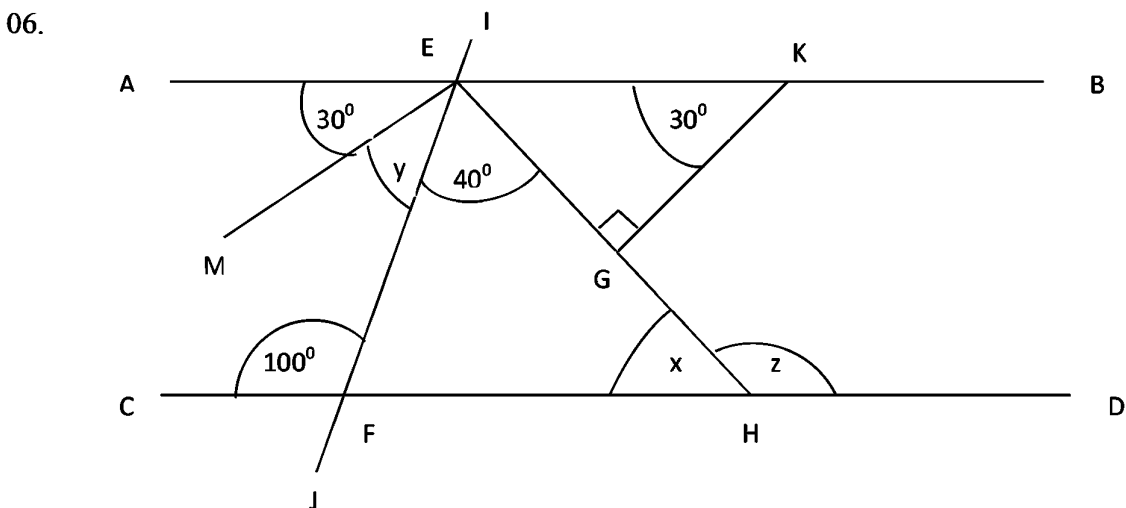
- i. What is the total portion received by wife and son as a fraction of the whole land. (2 marks)
- ii. What is the portion remained after giving to the both of them as a fraction of the whole land. (1 mark)
- iii. If the remaining part was divided into two equal parts and one part was sold, find the amount of sold part in hectares. (3 marks)

04. i. Construct a line segment AB such that $AB = 6\text{cm}$. (2 marks)
- ii. Construct an angle of 90° at A and an angle of 30° at B (4 marks)
- iii. Name the point at which the constructed lines of part (ii) meet together as C and complete the triangle ABC. (1 mark)
- iv. Construct the angle bisector of $\hat{A}BC$ and name the point of intersection of it and AC as 'O'. After that construct a circle of radius OA. (4 marks)

05. A semi-circular part was cut off from the rectangular sheet of length 24cm and width 10.5cm and joined it again to the sheet like below.



- i. Find the perimeter of the sheet before cut off the semi-circular part. (2 marks)
- ii. Find the area of the sheet before cut off the semi-circular part. (2 marks)
- iii. Find the perimeter of the shaded figure. (4 marks)
- iv. Round off the difference of perimeters to the nearest 10. (3 marks)



- i. Find the magnitude of the angle $\hat{K}EG$. (1 mark)
- ii. Find the value of x , y and z by giving reasons. (6 marks)
- iii. According to the above figure, name two pairs of parallel lines by giving reasons. (4 marks)