

First Term Test - 2019 March

Mathematics - I

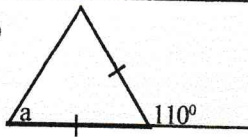
Time : 2 hours

Name :

♦ Answer all the questions

Part - A(01) Find $\sqrt{32}$ to the first approximation

(02)



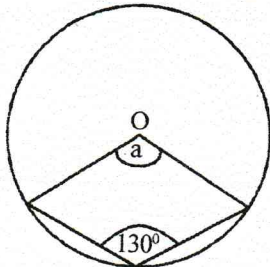
Find the value of a

(03) Express in index notation $\log_2 128 = 7$

(04) Find the factors

$$2x^2 + 7x - 15$$

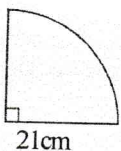
(05)



O is the centre of circle. Find the value of a.

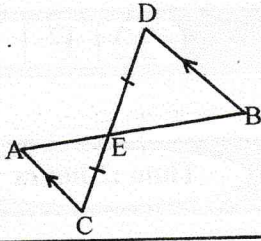
(06) The area of cross section of a triangular prism is 30cm^2 . If its length is 18 cm, find its volume.(07) If $3x - 1 \geq 11$, solve this inequality and write the least possible whole number that x can be taken.

(08)



Find the area of sector shown in the figure

(09)

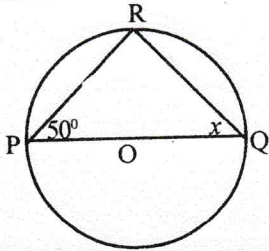


Under which case, $\triangle ACE$ and $\triangle BCD$ are congruent?

- (10) 10 men can complete $\frac{1}{4}$ of a drain in 4 days. Find how many mandays are necessary to complete the rest of work.

(11) Solve $x(x - 4) = 0$

(12)



In the given circle, O is the centre. O is the centre. According to the data in the diagram, find x .

- (13) Find mid value of the class 60 - 75

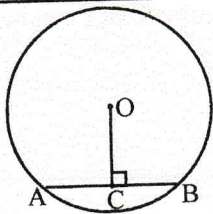
- (14) Nimali who is in 10m tall building sees a ship in the sea with 40° depression angle. Show this data in a rough sketch.

- (15) Write down suitable values for blanks.

$$(x + \dots)^2 = x^2 + \dots + 81$$

- (16) Find the gradient and the intercept of the graph $2y = 3x - 4$

(17)



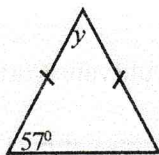
The radius of circle whose centre O is 15 cm. If $OC = 9$ cm, find the length of chord AB.

- (18) The circumference of base of a cylinder is 88cm. If the height of that cylinder is 20cm, find the area of curved surface of it.

(19) Find the least common multiple

$$12x^2, \quad 18xy^2, \quad 9xy^2$$

(20)

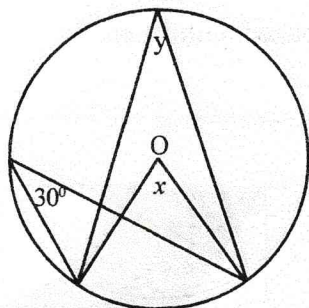


According to the data in the diagram, find y .

(21) A and B are two independent events. If $P(A) = \frac{2}{5}$ and $P(B) = \frac{1}{6}$, find $P(A \cap B)$

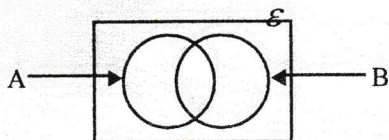
(22) The assessment tax per a quarter for a shop is Rs. 240. If annual rate of assessment tax is 8%, find annual assessed value of the shop.

(23)

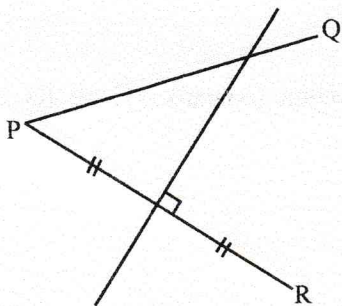


O is the centre of given circle. Find the values of x any y

(24) Shade $A \cap B'$ in given Venn diagram.



(25) PQ and PR are two boundaries. It is necessary to fix a lamp post equidistant to those two boundaries and equidistant to P and R. Using the knowledge of loic, construct the place where lamp post should be fixed and name it as T.

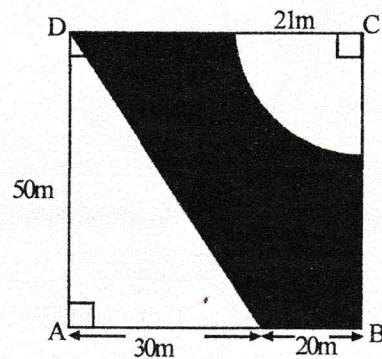


Part B

• **Answer all the questions**

- (01) A farmer cultivates beans in $\frac{1}{3}$ of his land and potatoes in $\frac{2}{5}$ of the land. He cultivates carrot in $\frac{1}{4}$ of the rest. Then he separates rest part to two equal portions and cultivates cabbage and radish. i) What fraction of total land, beans and potatoes are cultivated ?
- ii) What fraction of total land correct is cultivated ?
- iii) What fraction of total land, cabbage is cultivated ?
- iv) If radish is cultivated in 400m^2 , find the area of land that potato is cultivated.
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- (02) Following diagram shows a childrens, parch which is suggested to build. Children's play area is prepared in ADH part. It is suggested to fix a fish tank in the sector and to grow beautiful flowers in the shaded part.



- i) Find the area of play area
- ii) Find the area where fish tank is fixed
- iii) Find the area where flowers are grown
- iv) It is decided to fix a security iron fence around the sector where fish tank is fixed. Rs. 1500 is charged for 1m of it. Find the amount spent for it.

(03) a) The montly income of Nisaam is Rs. 52000.

i) Find his annual income

ii) First Rs 500 000 of annual income is free from tax. 4% tax is charged for balance income. find the tax amount that he pays.

b) 4 men words 3 days and cut 5m from a well. It should be cut 15 m to finish the cutting well.

i) Find amount of mandays need to cut the well completely.

ii) If 8 more men are joined to cut the rest of the well, find the total number of days need to cut and finish the well.

(04) a) $\mathcal{E} = \{ \text{Whole number from 1 to 10} \}$

$A = \{ x : x \text{ is an even number and } 1 < x < 10 \}$

$B = \{ x : x \text{ is a amposite number and } 1 < x < 10 \}$

i) Write setes \mathcal{E} , A and B as listing

ii) Find $A \cap B$

iii) Write B'

b) The probability of shooting a man to the target is $\frac{2}{3}$. The probability of shooting a woman to the target is $\frac{1}{5}$.

i) Represent the sample space in a tree diagram

ii) Find the probability of shooting both to the target.