



யா/ஹாட்லிக் கல்லூரி,பருத்தித்துறை.
J/ Hartley College, Point Pedro.



விடுமுறைக்கால செயலட்டை-2020 – தரம் 11
Holiday Worksheet– 2020 – Grade 11

MATHEMATICS

32

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I

இரண்டு மணித்தியாலம்
Two Hours

கட்டெண்
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MATHEMATICS

Part A

Answer the all questions must be done Part A & Part B

01. If the price of 1.5m of cloth is Rs.120.00.
Find the price 8m of cloth?

02. Find the highest common factor of 20,15 and 10?

03. Simplify $\frac{1}{3x} + \frac{3}{x}$

04. If $\frac{0.5 \times 0.3}{1.5} = \frac{a}{b}$, calculate the value of a,b?

05. If $\sqrt{2} = 1.414$, Evaluate the value of $\sqrt{8}$

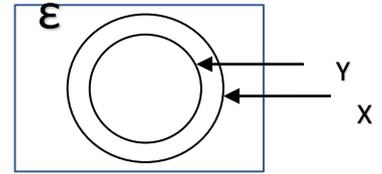
06. Calculate the 12% of Rs.1500?

07. Simplify $x^4 \times (x^{-2})^3$

08. Find two arithmetic means between 3 and 9?

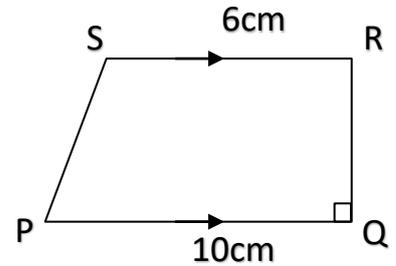
09. Write the mode and mean of the marks distribution 6,7,8,7,3,7,8

10. Shade the portion $X'n Y'$

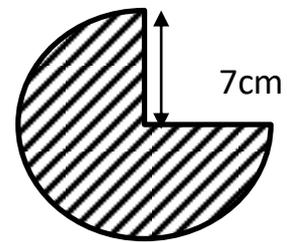


11. Find the value of a^2-4b^2 by solving the equation $a-2b=2$ and $2a+4b=6$

12. Area of the figure PQRS is 80cm^2 calculate the length of QR?

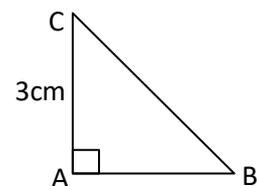


13. Find the area of the shaded portion of the given figure



14. Evaluate the value of $\frac{2^3 \times 6^3}{3^3}$

15. Area of the given triangle ABC is 6cm^2 Calculate the value of BC^2 ?

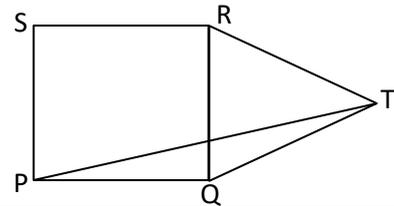


16. If $P(A)=\frac{1}{6}$, $P(B)=\frac{2}{9}$, $P(A \cap B)=\frac{1}{18}$. Find the value of $P(A \cup B)$

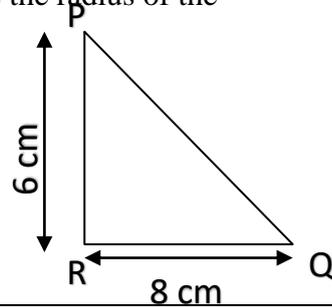
17. The length of the rectangular shape land is 3 time of its breadth. If the length of the land is 60cm. Express the area of the land in m^2 ?

18. If $a=(-2)$, $b=3$ find the value of a^2-b^2

19. PQRS is a square and QRT is an equilateral triangle, find the magnitude of \widehat{PQT} ?

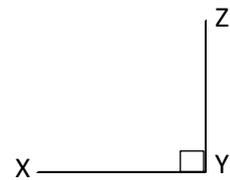


20. In the figure $\widehat{PRQ} = 90^\circ$, $PR = 6\text{cm}$ and $RQ = 8\text{cm}$ What is the radius of the circumcircle of the triangle PQR?



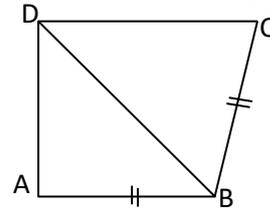
21. Make k as subject of the formula $\frac{R+k}{k+5} = T$

22. In the figure XYZ is a right angle mark two points which are equidistance from XY and YZ .



23. Find the least common multiples of $(a+3)$, a^2+5a+6

24. Write a pair of equal term, that $\triangle ABD$ and $\triangle BCD$ to be congruent. Describe that they are congruent in which condition?



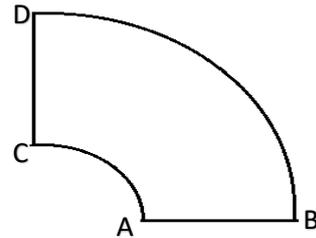
25. If the graph of the function $y = 7 - (x+2)^2$ moves positive direction along the x axis by two units. Write the equation of the new graph.

PART- B

01. Kumar sold $\frac{2}{7}$ of mangoes in first day from that he had bought. He took $\frac{1}{5}$ of the remaining for home need after that he sold half of the remaining second day
- What is the fraction of the mangoes that he took for home need of the whole part
 - What is the fraction of the mangoes sold in second day of the whole part?
 - What is the fraction of the mangoes that was sold in 2 days of the whole part
 - If the number of mangoes sold in 2 days is 280 find the number of the remaining mangoes?

02. The figure shows a quarter circular iron plate with radius 1cm is removed from a quarter circular iron plate with radius 15cm

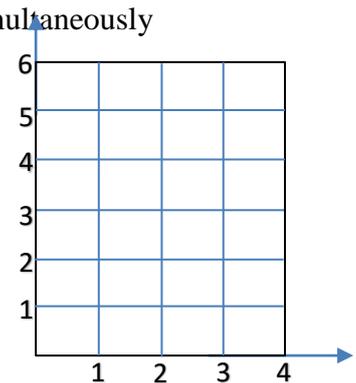
- Express the area of the plate in cm^2
- A rectangular plate ABCD is to be pasted. Coincide with AB. Area of the plate given above is 11 times of the area of the figure ABCD. Draw the ABCD coincide with AB and mark the length of the sides
- Express the perimeter of the given compound figure in cm ($\pi = 3.14$)



03. A and B started a business investing Rs.54000 and Rs.45000 respectively
- Express the investment of A and B as ratio in simplest form
 - C joins by investing a small amount with term after that the ratio of the investment of B and C is 3:4, calculate the investment amount of C.
 - If the profit of C is 15% of his investment at the end of the month Find his profit
 - If the profit ratio of A, B and C is 5:7:3. Express the profit percentage of A of his investment

04. Nimalan unbiased cubic die (A) and tetrahedral die (B) are told simultaneously complete the given grid by considering these outcomes

- Mark the out come in given grid using "X"
- Find the probability of getting prime numbers in two dice.
- Two digits numbers are written using numbers obtained in die (A) as 10^{th} place and die(B) as unit place, show that they are equal events to be odd number or even number



05.

Measurement Of fuel (l)	10 – 15	15 – 25	25 – 35	35 – 50	50 - 55
Days	4	8	10		2

The details of the measurement of the fuel used in a bus depot relevant to days is given above

- If it is explored 42 days fill in the given space
- Illustrate this information in a histograms
- Draw the frequency polygon on this histogram



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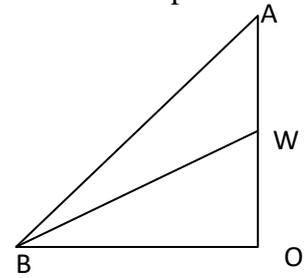
MATHEMATICS

Answer five questions from part A

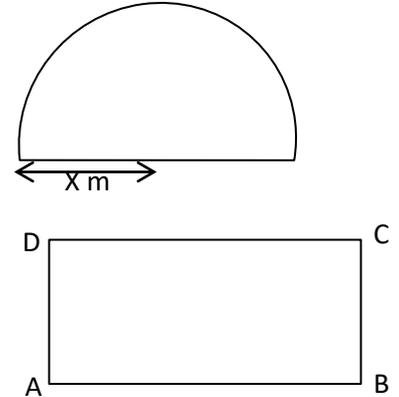
- 01.A. A person has acquired a loan of Rs 60000 at an annual interest rate of 24%. Which he intends to repay 15 equal monthly installment .
- Find the amount due from the principal loan amount each month
 - Find the interest for a month unit?
 - Find the amount of the monthly installment?
- B. If a loan Rs m at an annual rate t% The loan should be repaid in n months express the total interest in terms of m, r and n. he should pay?
02. A. Temperature changes (y) of a thing relevant to the time (x) is given by the function $y = -x^2 + 2x + 8$
- | | | | | | | |
|---|---|---|------|---|-------|---|
| x | 0 | 1 | 1.5 | 2 | 3 | 4 |
| y | 8 | 9 | 8.75 | 8 | | 0 |
- Complete the given table to draw the graph of the function $y = -x^2 + 2x + 8$
 - sketch the graph of the given function by selecting a suitable scale?
 - From this graph, Find the maximum temperature that the thing can be reached and the time for that
 - Describe the changes of temperature for which Interval of values $0 < x \leq 1.5$
 - If the temperature changes of another thing relevant to the time is given by $y = -(x+2)(x-7) + 5$. Find the time taking to get 5°C ?
- 03.A. Fater's age is 6times of son's age. after 10 years. Ratio between the ages of father and son will be 8 : 3 construct two simultaneous equations by taking the ages of son's and father's are respectively X and Y. Find their ages by solving the equations
- B. Factorize $(t-a)^2 - a^2 + t^2$

04.A. A person in top of the building OA observes a boy B on the ground in the depression angle of 42° , OB is horizontal and equal to 40m.

- Sketch a diagram and mark the given data
- Find the height of the building nearest to the whole number?
- Find the angle of elevation of the boy B who observes a window, which is in the mid point of the building?



05. A. In the given figure, radius of the circle is x m, length of the given rectangle is 1m more than the radius of the circle and breadth is 5m less than the radius
- Express the length and breadth of the rectangle in terms of x ?
 - If the area of the semi circle is π times of the area of the rectangle show that the values of x will be the solution of the equation $x^2 - 8x - 10 = 0$
 - Find the length of AB to the nearest whole number?
($\sqrt{26} = 5.10$)



06.A. The frequency distribution of the number of 5Kg of sugar packets sold in 80 days of a certain shop is given below

Number of Packets	50-60	60-70	70-80	80-90	90-100	100-110	110-120
Number of Days	04	05	10	16	25	14	06

- Find the mean number of packets which were sold in a day by taking the midpoint of the modal class interval as assumed mean.
- Find the number of packets which will be sold in 50 days.
- In a certain day, they got Rs 32000 as sales amount. Find the price of a kg of sugar on that day?

PART – B

Answer Five question From part B

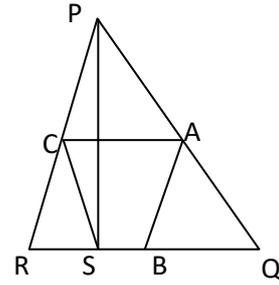
07. 3^{rd} , 4^{th} and 6^{th} terms of an arithmetic progression which has 2 as common difference are placed in a geometric progression.

- If the first term of the arithmetic progression is 'a'. Write the 3^{rd} , 4^{th} and 6^{th} terms of the arithmetic progression in terms of 'a'?
- Show that $a = -2$ by making a suitable equation
- By finding the common ratio. Show that 20^{th} term of the geometric progression can be written in the form of 4^{10} ?

08. Draw the following construction by using straight edge and compass

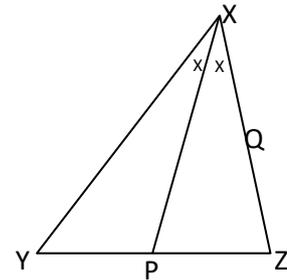
- Construct a triangle ABC, Where $AB = 6.5\text{cm}$, $BC = 7.0\text{cm}$ and $\angle C = 60^\circ$
- Construct a bisector of an angle BAC and mark the point it intersects of the straight line which is drawn perpendicular to AB from B as D.

- iii. Draw a locus of point P where $\widehat{BPD} = 90^\circ$ (except in the points B and D)
- iv. If the locus drawn above meets the straight line drawn the above question (ii) at point E.
show that $\widehat{BAE} = \widehat{EBD}$
- v. Write the special name of the straight line AB related to the locus drawn in the Question (iii) given above

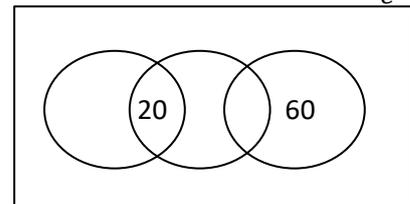


09. In the given triangle PQR $PS \perp RQ$,
A, B and C are the midpoints of PQ,
QR and RP respectively
- i. Show that ABRC is a parallelogram
 - ii. Prove that $\widehat{CRS} = \widehat{CSR}$
 - iii. Prove that the circle will go through the point S. Which goes through B, A and C

10. In the given triangle XYZ, XP is bisector of
angle \widehat{YXZ} if $YX \parallel PQ$
- i. Prove that $\triangle PQS$ is an isosceles triangle
 - ii. Show that $\triangle PQZ$ and $\triangle YXZ$ are equiangular triangles
 - iii. Why is that $\frac{YP}{PZ} = \frac{XQ}{QZ}$
 - iv. Show that $\frac{XY}{XZ} = \frac{YP}{PZ}$



11. An in complete Venn diagram which shows the information of the 400 registered vehicles of Sri Lanka in a certain year is given below
- A – Number of vehicles produced in India
 - B - Number of vehicles produced in Sri Lanka
 - C - Number of motorcars



- i. copy the venndiagram in your answer script denote the above data?
- ii. If the number of motor cars. Which were produced in India or Sri Lanka is 65. Find the number of vehicles which were produced in Sri Lanka?
- iii. Number of other vehicles is 255 and the number of vehicles which were not produced in India or Sri Lanka is 15. Find the number of vehicles produced in India?
- iv. Shade the portion $C' \cap (A \cup B)$ and describe this in words?

12. The given compound solid contains cylinder and a cone with same height of hcm, Which symmetrical axes coincide along a straight way. The radius of cylinder and cone are 4cm and 12cm respectively

- i. Find the volume of the compound solid in π and h?
- ii. If the compound solid was melted and casted into a hemisphere radius of r. Show that $r = 2 \times \sqrt[3]{12h}$
- iii. If $h = 5\text{cm}$ Find the radius of the sphere to the first decimal place by using log tables.

