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Department of Education, Southern Province

අවසාන වාර පරීක්ෂණය - 2019
Year End Term Test - 2019

10 ශ්‍රේණිය Grade 10	Mathematics - I	පැය දෙකයි Two hours

- **Answer all questions on this question paper itself.**
- **2 marks for each question in part A.**

Part A

01. A bus travels 124 km within 2 hours. Find it's speed in kilometers per hour.

02. Factorize $x^2 - 5x + 6$

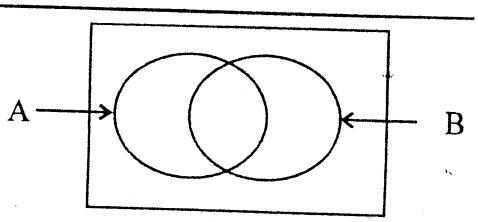
03. $\sqrt{x} = 5.1$ underline the suitable value for x.

(i) 19 (ii) 26 (iii) 35

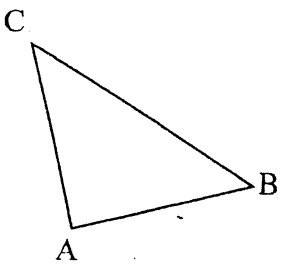
04. Simplify

$$\frac{3}{x} + \frac{1}{3x}$$

05. Shade the region which represent $A' \cap B$ in the Venn diagram

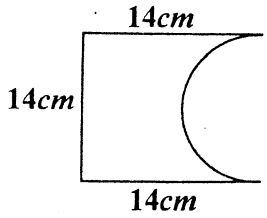


06. In the given ABC triangle $\hat{A} = 2\hat{B}$ and $\hat{B} = \hat{C}$. Find the value of $\hat{A}$



07. Express $5^0 = 1$ in logarithm form.

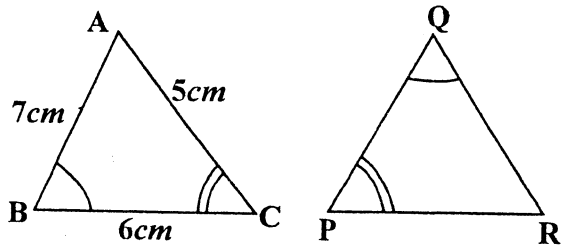
08. Find the perimeter of this figure which contains a semi circular sector.



09. A man borrowed Rs. 50 000 at an annual simple interest rate of 12%. Find the interest he has to pay at the end of a year.

10. Find the least common multiple of the algebraic expressions $3p^2q$ and $12q^2$

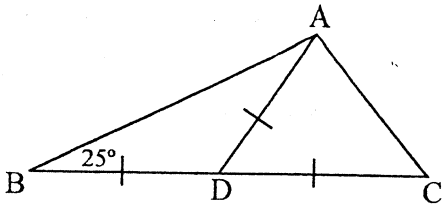
11. Triangles ABC and PQR are congruent. Using the given data find the lengths of the sides PQ, QR and PR.



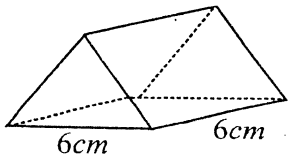
12. It is estimated that 144 man days are required to complete a certain task. How many men needed to complete this task within 24 days.

13. Solve $(2x-1)(x+1)=0$

14. Using the date in the figure. Find the value of $B\hat{A}C$.

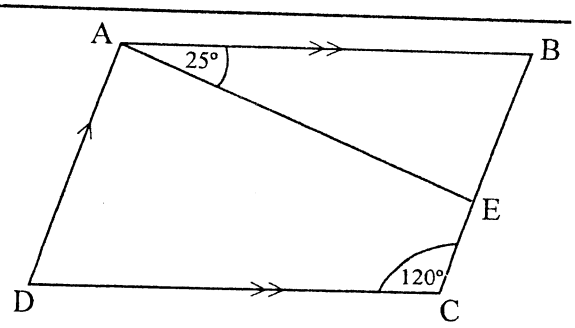


15. Draw sketches of 2 different faces with measurements of the below right equilateral triangular prism.



16. Write down suitable values for the blanks.
Equation of a straight line is given by $2y = 4x - 6$. It's gradient is ..... and the intercept is .....

17. ABCD is a parallelogram. Using the given data in the figure, find the value of $D\hat{A}E$.

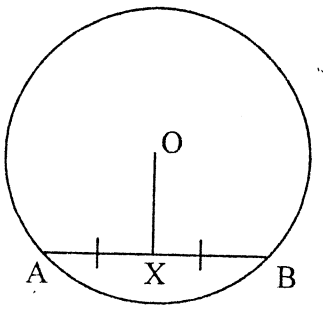


18. 1, 2, 3 are marked on the opposite faces of a fair cube shaped dice. If the fair dice is rolled once, Find the probability of getting an even number.

19. If the volume of a right circular cylinder of height 10 cm is 1540 cm^3. Find the base radius of the cylinder.

(Volume of a cylinder of height h and base radius r is $\pi r^2 h$, $\pi = \frac{22}{7}$)

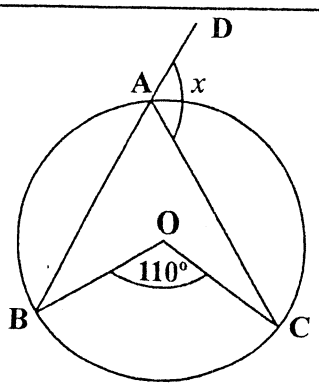
20. O is the centre of the circle and X is the mid point of the chord AB. Find the value of $A\hat{X}O$.



21. Below statements are regarding the given frequency distribution. If the statements are correct put a (✓) and if incorrect put (×). 12 - 18, 19 - 25, 26 - 32, 33 - 39, 40 - 46, 47 - 63

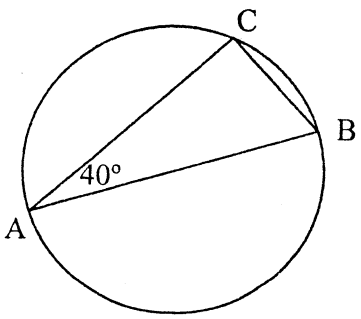
Class size of the distribution is 6	
Mid value of 26-32 class interval is 29	

22. O is the centre of the circle. Based on the given data in the figure find the value of x.

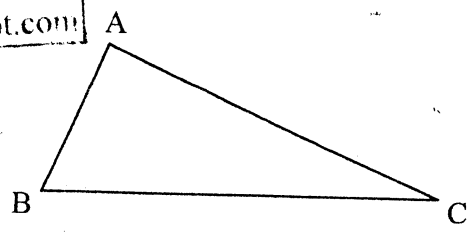


23. Write down the set of positive intergral solutions of the inequality. $3x - 2 \leq 1$

24. AB is a diameter of the circle. Using the given data find the value of $A\hat{B}C$.



25. Draw a sketh of the construction lines to find the point "P" which is moving equidistance from AB and AC sides and on the side BC.



Part B

(01) $\frac{1}{9}$ of those who participated to get the vehicle licence fail the written test. $\frac{1}{18}$ of those who participated to get the vehicle licence fail the medical test.

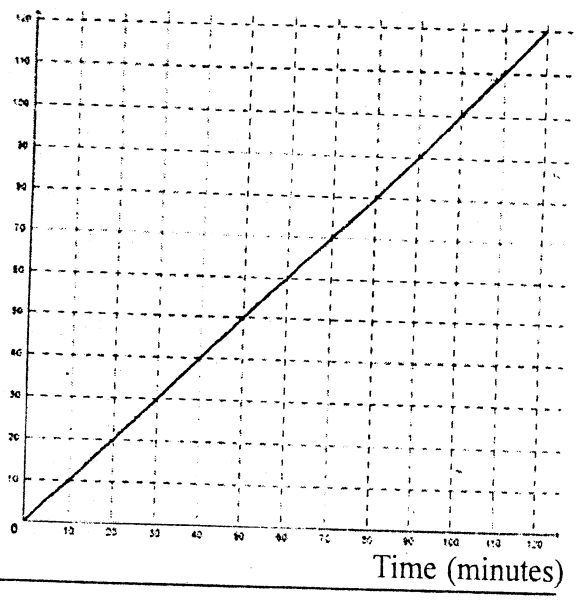
(i) Express those who fail the written and medical tests as a fraction. (02 marks)

(ii) From the remaining $\frac{4}{5}$ passed the practical test. Express that amount as a fraction of the total amount. (02 marks)

(iii) If 20 failed the practical test find the total number of people who participated to get the vehicle licence at the beginning. (03 marks)

(iv) How many people are there who are unable to get the vehicle licence (03 marks)

(02) The below graph shows how Sugath travelled in the express way by his car in a uniform speed starting from a certain expressway entrance to another expressway exit.



(i) Find the total distance he travelled. (01 ma

(ii) Find the speed of the vehicle in kilometers per hour. (02 marks)

(iii) After 20 minutes Naleem travelled the same distance at a speed of 100 kilometers per hour by his car. Represent the way Naleem travelled on the above graph itself. (03 marks)

(iv) Find the time Naleem took to complete the journey. (02 marks)

(v) Naleem passed Sugath at a certain place. Find the distance to that place from the starting point. (02 marks)

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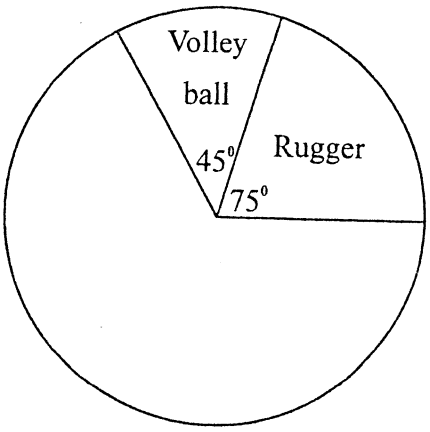
(03) (a) The assessed annual value of a house is Rs. 65 000. The annual rates percentage is 8%. Find the rates for a quarter for that house. (04 marks)

(b) Owner of the above house rented the house. The rental per month for the house is Rs. 12 000. He took the advance for a year and deposited that amount in a bank.

(i) Find the amount the owner deposited in the bank. (02 marks)

(ii) From the interest he received at the end of a year he paid the annual rates for this house. Then he remains Rs. 12 080. Find the annual simple interest rate. (04 marks)

(04) This pie chart shows how the students in the sports club of a certain school select cricket, football, volley ball and rugger as their sport. Each student selected only one sport. Three times the students who selected foot ball selected cricket.



(i) Find the angle at the centre of the sector which represent the students who selected foot ball.(02 marks)

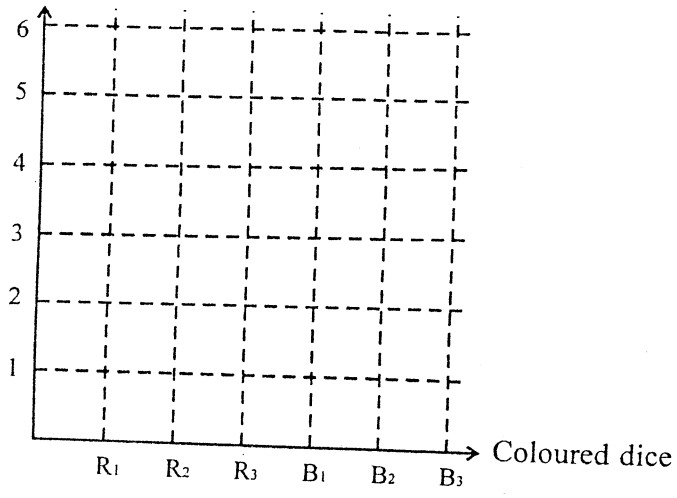
(ii) Represent the students who selected foot ball and cricket in this pie chart and include the relevant data in it. (03 marks)

(iii) If 30 students selected volleyball how many students selected cricket. (02 marks)

(iv) How many students in total are in this sports club. (03 marks)

(05) Amila engaged in a certain dice game. For that he use 2 fair dice. In one dice 3 faces are coloured in red and the remaining 3 faces are coloured in blue. In the other dice 6 faces are numbered from 1 to 6.

Numbered dice



(i) Amila rolled both dice. Represent the sample space in the given grid. (Here the red coloured faces represented by R_1 , R_2 , R_3 and the blue coloured face represented by B_1 , B_2 , B_3)

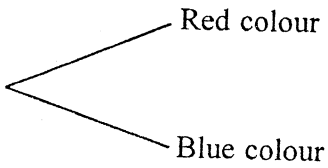
(02 marks)

(ii) Encircle the event in the grid getting red colour with a number greater than 4 and find its probability.

(02 marks)

He expect to get an odd number in the numbered dice and engaged in this game,

(iii) For that extend the below tree diagram and write down the probabilities. (03 marks)



(iv) Using the above tree diagram, find the probability of getting an odd number.

(02 marks)