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Department of Education, Southern Province

දෙවන වාර පරීක්ෂණය 2022
Second Term Test, 2022

00336

9 ශ්‍රේණිය
Grade 9

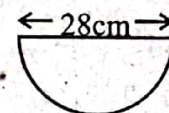
Mathematics

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Two hours

16

- ❖ Answer all the questions.
- ❖ Each question carries 2 marks. (2 x 20 = 40)

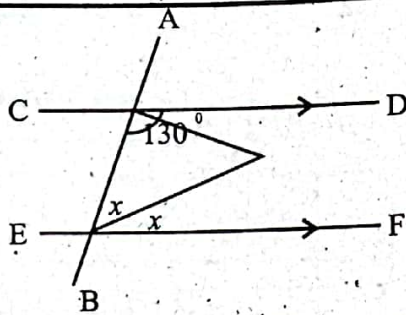
01. A school bag bought for Rs.2400 is sold for Rs. 3000. Find the profit percentage.
02. Express 4l 25ml in millilitres.
03. Find the value. $101_{\text{two}} + 1011_{\text{two}}$
04. Write 6780000 in scientific notation.
05. If $x = 2$ and $y = -3$ find the value of the expression $2x + y + 5$
06. Solve $3x + 4 = 16$
07. Roundoff 674.87 to the nearest first decimal place.
08. Find the distance travelled by a car travelling at a speed of 80 kilometres per hour in 3 hours 30 minutes.
09. Find the length of the arc of the semi- circle.



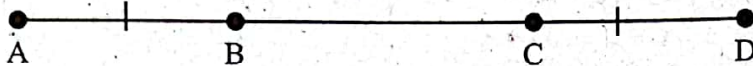
10. Place a (✓) Infront of the correct statements.
 - i) Opposite angles formed by the intersection of two straight lines are equal
 - ii) The sum of the interior angles of any triangle is 180° .
 - iii) The supplementary angle of 50° is 40°

11. How many $\frac{2}{3}$ m long pieces can be cut from a 6m long wire?

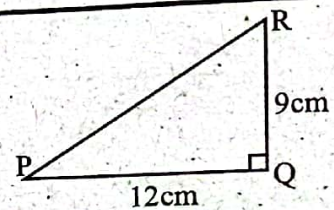
12. Find the value of x .



13. If $AB = CD$ Show that $AC = BD$

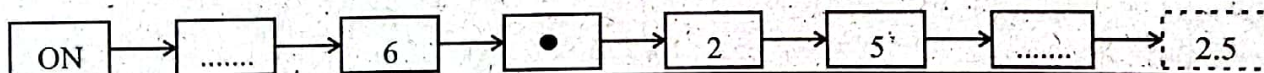


14. Find the length of the side PR

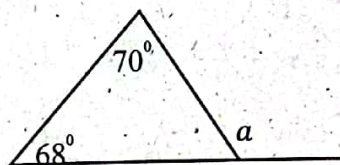


15. Find the factors of $25m^2 - n^2$

16. Fill in the blanks with suitable key values, to obtain the value $\sqrt{6.25}$ using the scientific calculator.



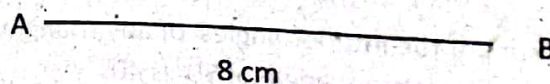
17. Find the value of a



18. The price of 5 bottles of honey is Rs.6000. What is the price of 7 such bottles of honey?

19. Factorize. $x^2 + 5x - 24$

20. Draw a locus of a point equidistant from A and B in the figure. Name it as XY.



PART II

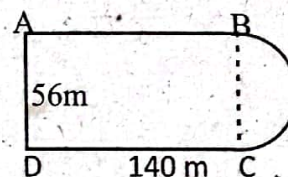
- ❖ Answer 5 questions only.
- ❖ Each question carries 12 marks.

01. (a) In a drill show, the students in each row are arranged in a pattern of numbers 7, 10, 13, 16,...
- i) Find the common difference of this pattern. (1 mark)
 - ii) Write the number of students in the next two rows of the pattern using the common term (2 marks)
 - iii) Write the general term using common difference. (2 marks)
 - iv) Find the number of students in the 12th row. (2 marks)
 - v) Which row has 52 students? (2 marks)
- (b) When two times of b and another 5 is added to the a is equal to c
- i) Construct a formula including a , b and c (1 mark)
 - ii) Make b subject of the formula (2 marks)

02. (a) A computer was imported for 300 American Dollars. One American Dollar is Rs. 350. The price of the computer has been marked keeping a profit of 20%. The computer is sold by giving discount of 10% on the marked price.
- i) How much rupees were spent for import the computer? (2 marks)
 - ii) What is the marked price? (2 marks)
 - iii) What is the selling price of the computer after giving the discount? (3 marks)
 - iv) Find the profit percentage. (3 marks)
- (b) If a broker charged 5% for selling a motor car. Find the commission charged for a car sold for Rs. 3 000 000 (2 marks)

03. (a) Simplify. $\left(\frac{1}{4} + \frac{4}{5}\right) \div 2\frac{4}{5}$ (3 marks)
- (b) $\frac{5}{8}$ of a tank is filled with water. In the second time $\frac{2}{3}$ of the remaining part filled again with water.
- i) Find the empty part after initial filling as a fraction of the whole tank? (2 marks)
 - ii) Find the part filled in the second time as a fraction of the whole tank? (2 marks)
 - iii) Find the empty portion after the second filling as a fraction of the whole tank? (2 marks)
 - iv) If 2100l of water is in the tank after the second filling, how much more water is required to fill the tank completely? (3 marks)

04. The figure shows a garden which consist with rectangular portion and semicircular portion.



- i) What is the radius of the semicircular portion? (1 mark)
- ii) If the flag poles are planted along the boundary CD which is faced to the main road at intervals of 2m, find the number of flag poles required. (2 marks)
- iii) Find the arc length of the semicircular part. (3 marks)
- iv) It is needed to construct a fence using 4 barbed wires. If one metre of barbed wire costs Rs. 25, find the total cost for barbed wires. (3 marks)

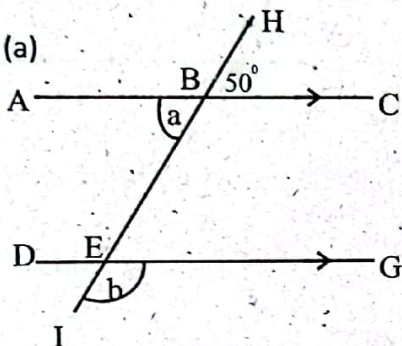
- v) A right-angled triangular piece of land is intended to grow grass. It is with one edge AD and the other side lying on the extended CD and area is equal to $\frac{1}{4}$ of the area of the rectangle ABCD. Draw that right-angled triangle with the measurements. (3 marks)

05. A table prepared to draw the graph of the function $y = 3x + 1$ is given below.

x	-2	-1	0	1	2	3
y	-5		1	4		10

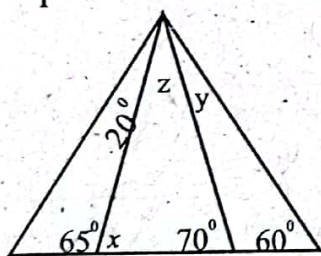
- Write the gradient and intercept of the graph. (2 marks)
- Find y values if $x = -1$ and $x = 2$ (2 marks)
- Draw the graph of the above function using a suitable coordinate plane. (4 marks)
- Write the coordinates of the point where the graph intersect the y axis. (2 marks)
- Write the equation of the graph which is parallel to the above graph and which passes through the origin. (2 marks)

06. (a)



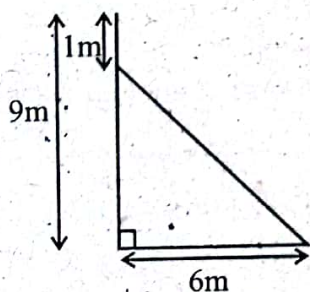
- Name a pair of alternate angles (1 mark)
- Name a pair of allied angles (1 mark)
- Which type of angles are $\angle ABH$ and $\angle DEB$ (1 mark)
- Find the values a and b by giving reasons. (4 marks)

(b)



Find the values x, y, z by giving reasons. (2 + 3 marks)

07. (a) A wire tied to a point 1m below of the top of the 9m height pole and the other end is tied to a point 6m away from the base of the pole. (as the diagram)



- What is the height from the ground where the wire is tied to the pole? (1 mark)
- Find the length of the wire (neglect the knotted part of the wire) (3 marks)

- Construct a triangle ABC where $AB = 5$ cm, $BC = AC = 6.5$ cm (3 marks)
- Construct angle bisector of $\angle CAB$ and $\angle CBA$ and name the point of intersect as P. (2 marks)
- Construct perpendicular to AB from P (2 marks)
- Name the point Q where it meets AB and measure the length of QA (1 mark)



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