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சபரகமுவ மாகாணக் கல்வித் திணைக்களம்
Sabaragamuwa Provincial Department of Education

තෙවන වාර පරීක්ෂණය - 2018

09 ශ්‍රේණිය

மூன்றாம் தவணைப் பரீட்சை - 2018

தரம் 09

Third Term Test - 2018

Grade 09

ගණිතය - 1

கணிதம் - 1

Mathematics - 1

පැය 2 හි මිනිත්තු 30

2 மணித்தியாலம் 30 நிமிடம்

Two and Half Hours

Answer all questions in this paper itself.

(1) Write 234.63 in scientific notation.

(2) How many hours is $\frac{2}{5}$ of 15 hours?

(3) Find the profit percentage of an article from which Rs 45 is gained as profit by selling that article of cost price Rs 300.

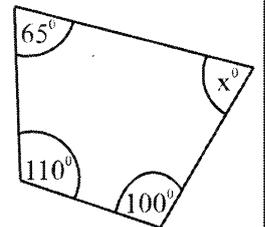
(4) Find the mean mass of a student, where the sum of mass of 40 students is 1 400 kg.

(5) Find the factors of the expression. $49 - y^2$

(6) Show that 34 is the 13th term of a number pattern for which the general term $T_n = 3n - 5$.

(7) Find the value $1011_{\text{two}} + 101_{\text{two}}$

(8) Find the value of "x" according to the information given in the figure.

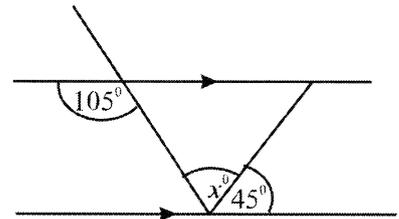


(9) Solve. $\frac{x-3}{4} = 12$

(10) If an aero plane travels 40 km in 15 minutes in a uniform velocity, find the distance traveled in an hour.

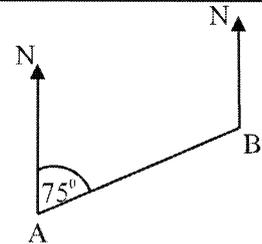
(11) Find the arc length of the semicircle of radius 14 cm.

(12) Find the value of "x"

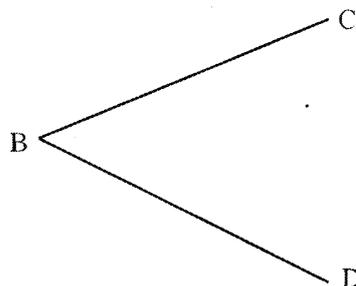


(13) Find the value of $3a + b$ if $a = 2$ and $b = (-1)$

(14) Find the bearing of A from B where the bearing of B from A is 075° .

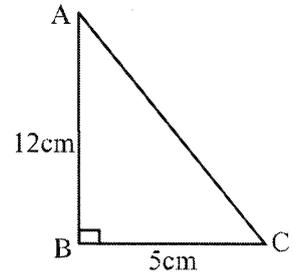


(15) Light post A should be fixed equidistant from the paths BC and BD, and 3 m distance from B. Mark the location of A using your knowledge of Loci.

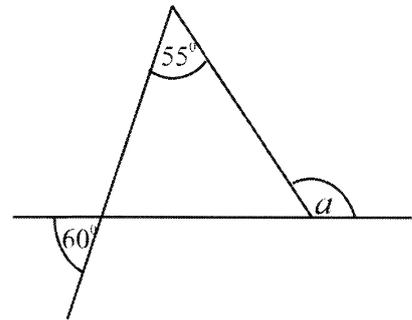


(16) Show that the area of a circle is 154 cm^2 , of which the radius is 7 cm.

(17) Find the length of side AC, according to the data given in the diagram.



(18) Find the value of “ a ” according to the data given in the diagram.



(19) If the results of the following experiments are equally likely, mark (\checkmark), if they are not equally likely, then mark (\times).

i. Throwing up a cubic fair die.

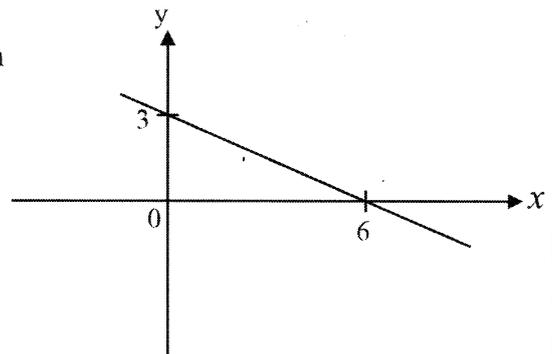
ii. Throwing up a cuboidal fair die.

iii. Tossing up an unbiased coin.

(20) (i) Select and underline the equation of the graph drawn on the co-ordinate plane.

a. $y = -\frac{1}{2}x + 3$

b. $y = \frac{1}{2}x + 3$



(ii) Write the reason for your answer.

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09 ශ්‍රේණිය
தரம் 09
Grade 09

ගණිතය - II
கணிதம் - II
Mathematics II

Answer only six questions.

Whole marks will not be given, if the method of getting answers isn't provided in the necessary places.

- (01) a) An incomplete table of values prepared to draw the graph of the function $y = 2x + 3$ is given below.

x	-2	-1	0	1	2
y	-1	5	7

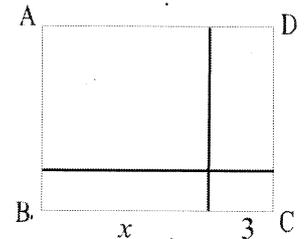
- (i) Show the method of getting the values and complete the table.
(ii) Draw the graph of above function in a suitable co-ordinate plane.
(iii) Find the value of x , where $y=4$, using the graph you drew.

- b) (i) Simplify the inequality $3x - 2 > 10$
(ii) Represent the solution on a number line.

- (02) (i) Simplify $\frac{7}{x+1} + \frac{4}{x+1}$

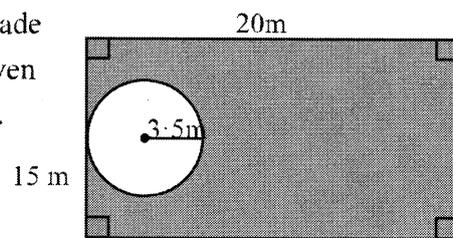
- (ii) Expand and simplify $(a+3)(a-6)$

- (iii) Area of the rectangle ABCD is $x^2 + 5x + 6$ square units.
Find the length of the side CD using the knowledge of factors.



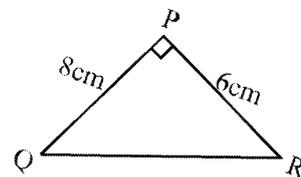
- (iv) Find the value of $108^2 - 8^2$ using $x^2 - y^2 = (x+y)(x-y)$

- (3) (a) A sketch diagram of a circular shaped pond has been made in a corner of a rectangular shaped flower garden, is given below. Grass has been grown in the shaded area of this.

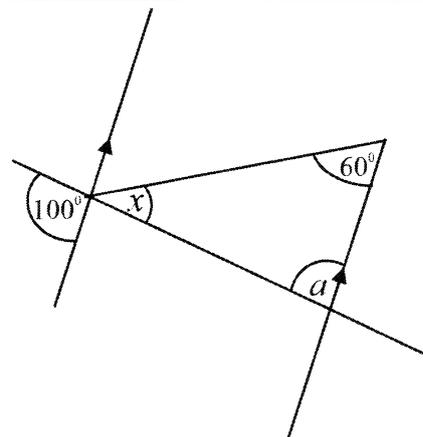


- (i) Find the surrounded length of the pond.
- (ii) If a decorative fence has been made around the limits of the flower garden, find the length of the fence.
- (iii) By finding the area of the circular shaped pond and the area of the flower garden, find the area of grass grown region.

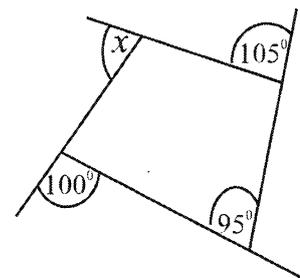
- (b) Find QR using Pythagoras' relationship.



- (04) (i) Find the value of "a" and "x" according to the information given in the figure.



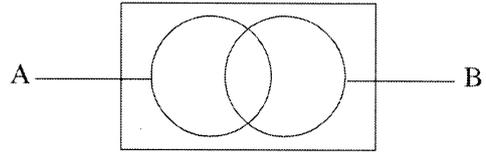
- (ii) Find the sum of the interior angles of a polygon with 7 sides.
- (iii) Find the value of "x" according to the information given in the diagram.



- (5) Construct a geometrical figure which is suitable for following data, using only a straight edge with cm/mm scale and a pair of compasses.

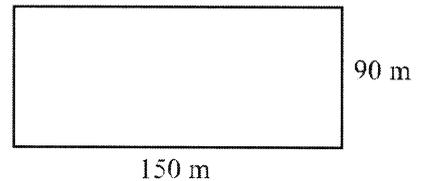
- (i) Construct triangle ABC where $AB = 7.3$ cm, $\hat{BAC} = 60^\circ$ and $AC = 6.5$ cm.
- (ii) Construct perpendicular bisectors of AB and BC.
- (iii) Name the intersecting point of above two bisectors as P.
- (iv) Construct the circle by considering P as center and PA as radius.
- (v) Measure and write its radius.

- (6) (a) If $\epsilon = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
 $A = \{2, 4, 6, 8\}$
 $B = \{2, 3, 5, 7\}$



- (i) Copy Venn diagram and insert above information on it.
(ii) Write the set $(A \cup B)$
(ii) Shade the area ' $(A \cup B)$ '
- (b) A box contains 4 red pens (R) and 2 blue pens (B). A pen is taken out randomly from it.
- (i) Write the sample space S
(ii) Find the probability $P(A)$ of the pen that is taken out is being a red pen.

- (7) (i) From a map shown in the scale 1 : 50 000, find real distance between A and B in kilo meters where scale length between A and B is 8 cm.
(ii) City Q is situated in the east of city P. Find the bearing of Q from P.
(iii) Sketch diagram of rectangular land given in the figure.
Draw the scale diagram of that land in the scale of
1 cm \rightarrow 30 m



- (iv) The owner of the above land said that, 2500 m of wire is required to fence the above land in 5 rounds. State the falsehood or truth of the above statement with reasons.

- (8) Following table represents the amount of rice sold in a day and number of customers.

Amount of rice in kg	10	15	20	25	30	35	40	45	50
Number of customers	8	5	6	10	9	5	4	2	1

- (i) Find the mode of the above information.
(ii) Find the mean amount of rice in kilograms, bought by a customer in a day.
(iii) Find the total amount of rice in kilograms that could be expected to sell in a month.
(iv) Show that the amount of rice sold in a month is above 41 000 kg, If the mean amount of daily rice consumed increased by 10%, as the market price of rice decreased.