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 Western Provincial Education Department - Colombo Educational Zone
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දෙවන වාර ඇගයීම - 2014
 இரண்டாம் தவணை மதிப்பீடு - 2014
 Second Term Evaluation - 2014

ශතකය I හා II පත්‍රය
 கணிதம் வினாத்தாள்-1-11
 Mathematics Paper I & II

පැය දෙකයි
 இரண்டு மணித்தியாலங்கள்
 Two Hours

9 ශ්‍රේණිය
 தரம் 9
 Grade 9

Name/Index No. :

Part I

• Answer all questions on this paper itself.

1. A Radio bought for Rs. 1500 and sold at Rs. 1 750.
Find the profit obtained by selling it.

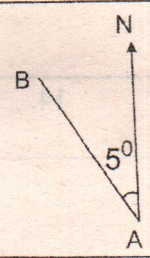
2. Write 0.001 in scientific notation.

3. Express $\frac{71}{1000}$ as a percentage.

4. Convert 3.5 m^3 in liters

5. Write $10^2 = 100$ in logarithmic form

6. Write the bearing of B from A



7. Find the value of $\frac{1}{3^{-2}}$

8. What is the answer that will appear on the display screen when these keys are operated in calculator.

ON	6	5	CE	6	-	8	+/-	=
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9. Express a in terms of b in the formula.

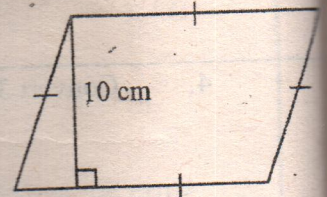
$$ab = a + b$$

10. Factorise $25x^2 - \frac{1}{4}$

11. Using the knowledge of factors and simplify.

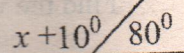
$$25 \times 1.54 + 75 \times 1.54$$

12. The area of this rhombus is 120cm^2 .
Find the perimeter it.



13. A bus travelled 80 km in 4 hours time. Find its speed.

14. Find the value of x

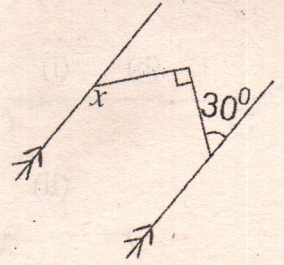


15. Amal received a loan of Rs. 10 000 from bank for annual simple interest 14%

(i) Find the amount of interest for one year

(ii) If she settled a Rs, 14 200 to get relieved of the loan. Find the duration of this loan.

16. Find the value of x .



17. If $x = 3$, find the value of the expression $x^2 - 4x$.

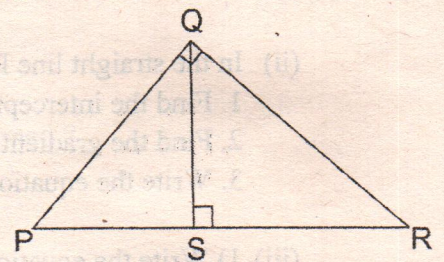
18. Kamala says $\frac{1}{6}$ is larger from the fractions $\frac{1}{6}$ and $\frac{1}{5}$. Is it correct ? give reasons.

19. PQR is a right angled triangle. QS is perpendiculars to PR.

PQ = 8 cm, QR = 6 cm

(i) Find the length of PR

(ii) Find the length of QS.



20. $x^2 - y^2 = 20$ Find the values of x and y .

Part B

- Answer the **first question** and **any other four questions**.
- 16 marks for the first question and 11 marks for each others.
- Answer the second part in a separate paper where it is necessary and attach it to the Part I

1. Recall the activity done in the classroom preparing wall newspaper in direct proportions and graphs.

(a) Copy the following situations and it is direct proportion mark with (✓) and if it is not mark with (x)

- (i) The length of an equilateral triangle and its perimeter.
- (ii) The radius of a circle and its area.

(b) (i) Express the following as ratio and in the simplest form
50 minutes, 2 hours.

(ii) a motor car travelled by 20 km in 50 minutes. Find the distance x it can travel in 2 hours at the same speed by filling the cages below. Since this is direct proportion.

$$50 : \square = \square : x$$

$$\frac{5}{\square} = \frac{\square}{x}$$

$$5x = \square \times \square$$

$$x = \square \text{ km}$$

(c) The graphs of three parallel lines P, Q and R are shown on the cartesian plane.

(i) Write the co-ordinates of points. A and B

(ii) In the straight line R

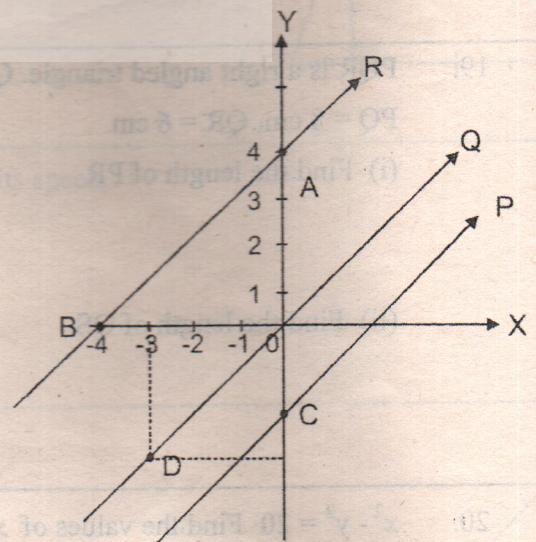
1. Find the intercept
2. Find the gradient.
3. Write the equation of R

(iii) 1) Write the equation of Q

- 2) x co-ordinate of point D is -3 what will be its y co-ordinate.

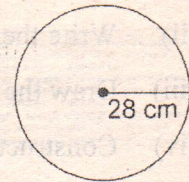
(iv) The line P intersects x axis at (2, 0)

- 1) Write the co-ordinate of C
- 2) Write the gradient of P
- 3) Write the equation of P.



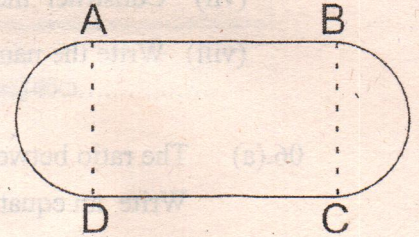
02. (a) The area of the base of tank is 400 cm^2 . If the capacity of the tank is 20l, find the height of it.

(b) (i) Find the perimeter of the circle write radius 28 cm.



(c) A plan of 400 m running track is shown in the figure.

It has a rectangular part and two semi circular parts as shown in the diagram. The length AB is 112 m.



- (i) What is the length DC.
- (ii) What is the total length of two semicircular portion.
- (iii) Hence find the length AD.

03. (a) Write the general term relevant to the number pattern

- (i) 2, 4, 6, 8
- (ii) 1, 4, 9, 16, 25

(b) The length (in centimeters) of strips of ribbon that have been cut in a particular pattern is given below.

6, 10, 14, 18

- (i) Find the common term of the pattern. (general term)
- (ii) What is the length of the 10th strip.
- (iii) Which strip is 62cm long ?

04. (a) Find the factors of $y^2 + 7y + 12$

(b) (i) Explain in words how the following equation formed ?

$$\frac{x}{2} - 5 = 3$$

(ii) Solve the above equation.

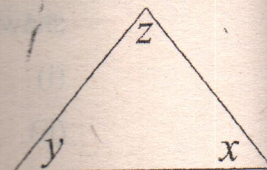
(c) Solve the pairs of simultaneous equations.

$$2x + 3y = 18$$

$$5x - 3y = 3$$

05. (i) Mark a fixed point O. Draw the locus of points moving 4 cm away from O.
 (ii) Write the name of the above figure.
 (iii) Draw the biggest chord AC in the figure.
 (iv) Construct an angle $\hat{A}CB = 45^\circ$ and CB as another chord of the figure.
 (v) Join AB. Measure and write the angle $\hat{A}BC$.
 (vi) According to the side and angle state the type of the triangle.
 (vii) Construct the locus of points which are equidistant from A and C.
 (viii) Write the name of the locus of points which are equidistant from AB and BC.

- 06.(a) The ratio between the angle of x, y, z is 1: 2: 3.
 Write an equation and find the values of x, y, z in the triangle.



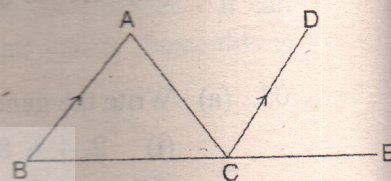
- (b) In triangle ABC the side BC is produced to E and AB//DC.

Fill in the blanks

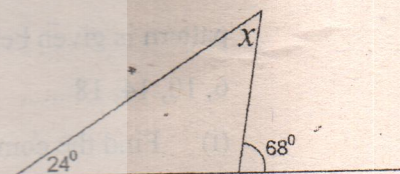
$\hat{A}BC = \dots\dots\dots$ (corresponding angle)

$\hat{B}AC = \dots\dots\dots$ (.....)

$\therefore \hat{A}BC + \hat{B}AC = \dots\dots\dots + \dots\dots\dots$
 $= \dots\dots\dots$

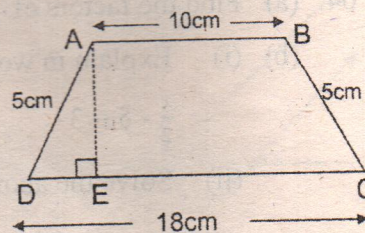


- (c) Find the value of x in the diagram.



- 07.(a) A ladder XY is keeping against a vertical wall, so that the point Y is on horizontal ground and the point X is touching the wall. Draw a rough sketch of above data.

- (b) The given figure shows a trapezium ABCD.



- (i) Find the length of DE
 (ii) Using Pythagoras relationship find AE
 (iii) Find the area of $\triangle ADE$
 (iv) What is the area of trapezium ABCD

- (c) $(2x^0)^3 \times x^2 y^{-2}$ Simplify and write the answer in positive index form.