PROVINCIAL DEPARTMENT OF EDUCATION - NORTH WESTERN PROVINCE

Second Term Test 2018
MATHEMATICS

Grade 9 **Time : 2 ½ hours**

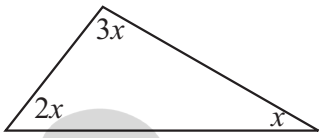
Name / Index No. **Part I**

- **Answer 1st 20 questions on this paper itself.**
  2 marks are given each correct answers from 1 to 20 (02 x 20 = 40)

01. Price of three mathematical instrument boxes are Rs. 450. Find the price of such five boxes.

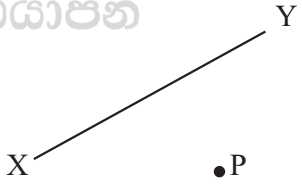
02. Subject t of the formulae $v = u + ft$

03. Find the value of x according to the data given in the diagram.



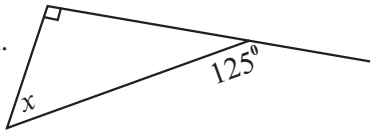
04. (i) What is the smallest whole number when round off to the nearst 10 obtain 170 ?
    (ii) Round off 2455 to nearest 100.

05. Construct a perpendicular to straight line XY from P.



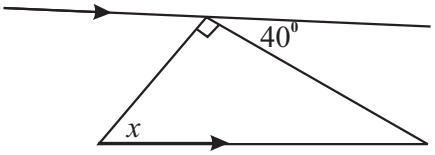
06. Write 1010101_{two} as base ten number.

07. Find the value of x according to the data given in the diagram.

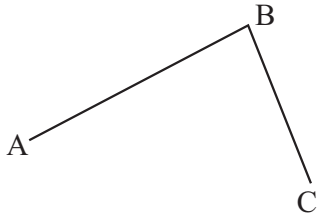


08. Factoric, $x^2 + x - 42$

09. Find the value of x according to the data given in the diagram.



10. Construct the angle $B\hat{C}D$ such that $A\hat{B}C = B\hat{C}D$

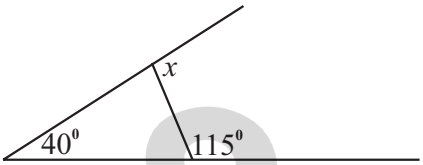


11. 48.5368 (i) Round off to two decimal places.
(ii) Round off to the nearest whole number.

12. What is the amount of Sri Lankan rupees received by a forigner when exchange 200 Singapore Doller in a day which pays Rs. 118 for one singapore doller?

13. Write **6.023×10^4** in general form.

14. Find the value of ***x*** according to the data given in the diagram.



15. A student apply keys of a normal calculator to find the value of following mathematical problem. What is the answer he obtain?

16. Write 0.0058 in scientific notation.

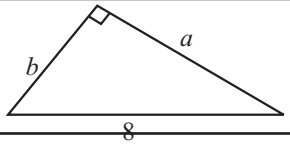
17. Find the value of C in the formulae $C = \frac{5}{9}(f-32)$, when $f = 95$.

18. The three anggles of a triangle are at the ration of 1 : 3 : 5, what is the magnitude of the largest angle?

19. Construct angle, $A\hat{B}C = 60^0$

A _____ B

20. Write the Pythagarean relationship for triangle from a, b and 8.



- **Write the answer to first one and four other questions.**

  (16 marks are given to the first one and 11 given to the each other questions.)

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01. (a) Remaind the lesson loci and construction and by Using pair of copasses cm/mm straight edge and showing constructions lines clearly.

(i) Construct straight line segment AB = 8cm. (01m.)

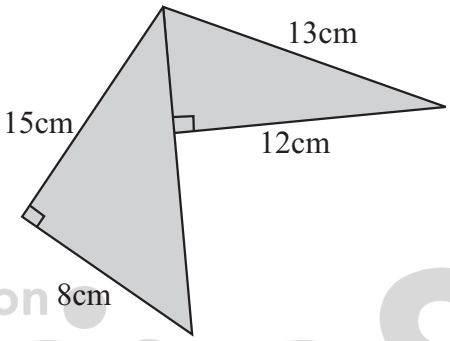
(ii) Mark point C such that $A\hat{B}C = 30^0$ and AC = 8cm (02m.)

(iii) Construct perpendicular bisector of AC. (02m.)

(iv) Construct angle bisector of $A\hat{C}B$. (02m.)

(v) Name the intersection point of above two bisectors as P and construct the locus of the point moving 4cm from point P. (03m.)

(b) Find the perimeter of the given figure. (06m.)



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02. Incomplete table of data prepared to draw the graph of the function $y = 2x - 3$ is given below.

x	-1	0	1	2	3
y	-5	....	-1	....	3

(i) Fill in the blanks of the table. (02m.)

(ii) Draw the graph o the function on a suitable Cartesian plane. (03m.)

(iii) Draw the straight line passing through the points (-2, -1) and (1, 5) on the same Cartesian plane above. (02m.)

(iv) Write the gradient and intercept of the graph drawn in the part (iii) above. (02m.)

(v) What is the relationship of the two graphs? (02m.)

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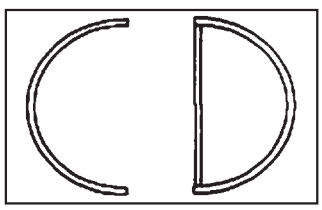
03. Notice board which exhibited in a CD shop is given below. Two letters C and D are made from small glass tube and their curved parts are semicircles of diameter 42cm.



(i) Find the length of glass tube used for letter C. (03m.)

(ii) Find the length of glass tube used for letter D. (02m.)

(iii) What is the total amount spend to prepare two letters if Rs. 30 spend for length of 1cm? (03m.)

(iv) Bulbs attached to lighten inside the glass tube from 6 cm gaps. How many bulbs are there inside the tube? (03m.)

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04. (a) Simplify,

(i) $\frac{7^5 \times 7^{-8}}{7^{-2}}$ (03m.)

(ii) $\frac{(6^2)^3 \times 6^0}{6^4}$ (03m.)

(b) Mr. Asiri has to exchange his Rs. 310 000 into Amarican dollars when he is foreign tour.

If 1 Amarican Doller = 155.00 Sri Lankan rupees,

(i) How many us dollars he received when exchange money? (03m.)

(ii) He bought a mobile phone in his tour of value 220 us dollars. What is its value from Sri Lankan rupees? (02m.)

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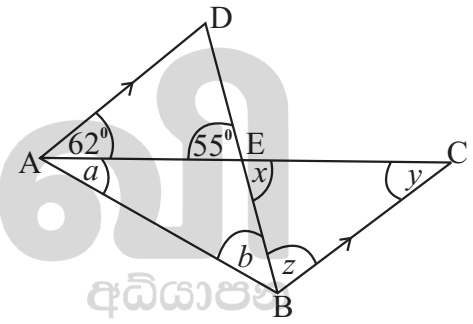
05. Answer to following questions according to the information in the figure.



(i) By giving reasons find the value of angles ***x, y*** and ***z***. (06m.)

(ii) Write the relationship between angles ***x, a*** and ***b***. (02m.)

(iii) If a = 28^0, then show that the straight lines AB and BC are perpendicular to each other. (03m.)

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06. (i) Solve, $3(2x - 3) = 33$ (03m.)

(ii) Solve, $\frac{11x + 3}{4} + 8 = 11$ (03m.)

(iii) Solve the pair of simultaneous equations, $2a - 3b = 5$

$5a + 3b = 44$ (05m.)

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07. Danapala bought 80 coconuts each at the price of Rs. 60 and he sold one coconut at the price of Rs. 72.

(i) What is the amount he spends to buy coconuts? (02m.)

(ii) What is the profit he obtains by selling coconuts? (03m.)

(iii) What is profit percentage he obtains by selling coconuts? (03m.)

(iv) What should be the selling price of one coconut to obtain 25% profit? (03m.)

Answer Sheet

Part I

01.	Rs. 750	01	
	$\frac{450}{3}$ 5	01	02
02.	$f = \frac{v-u}{f}$	01	
	$ft = v - u$	01	02
03.	$x = 30$	01	
	$2x + 3x + x = 180^0$	01	02
04.	(i) 165	01	
	(ii) 2500	01	
05.	Correct construction		02
06.	85 $2^6 \times 1 + 2^5 + 0 \times 2^4 \times 1 + 2^3 \times 0 + 2^2 \times 1$ $2^0 \times 0 + 2^0 \times 1$		02
07.	$x = 35^0$		
	$x + 90^0 = 125^0$	01	02
08.	$(x + 7)(x - 6)$		
	$x^2 + 7x - 6x - 42$	01	02
09.	$x = 50^0$		
	to take alternate angle	01	02
10.	Correct constrution		02
11.	(i) 480 . 54	01	
	(ii) 49	01	02
12.	Rs. 23600		
	118 x 200	01	02
13.	60230		02
14.	$x = 105^0$		
	Finding interior angle	01	02
15.	18		02
16.	5.8×10^{-3}		02
17.	35 Correct subtitution	01	
		01	02
18.	100^0		
	$x + 3x + 5x = 180^0$	01	02
19.	Correct construction		02
20.	$8^2 = a^2 + b^2$		02

Part II

01.	(a) (i) Construction of AB	01	
	(ii) Construction $A\hat{B}C = 30^0$	01	
	taking AC = 8cm	01	
	(iii) perpendicular bisector AC	02	10
	(iv) angle bisector	02	
	(v) marking P	01	
	drawing circle of 4 cm	02	
	(b) taking AC = 17 cm	02	
	taking EA = 5 cm	02	06
	perimeter 60 cm	02	
			16
02.	(i) -3, 1	02	
	(ii) Axes, points, graph	03	
	(iii) Correct drawing	02	
	(iv) gradient 2	01	11
	intercept 3	01	
	(v) parallel	02	
			11
03.	(a) (i) $\frac{1}{2} \times 2 \times \frac{22}{7} \times 21$	02	
	= 66 cm	01	03
	(ii) 66 + 42 = 108 cm	02	02
	(iii) 30(108 + 66)	01	
	රු 5220.00	02	03
	(iv) 30	03	03
			11

04.	(a) (i) $\frac{7^{-3}}{7^{-2}}$	01	
	7^{-1}	01	
	$\frac{1}{7}$	01	03
	(i) $\frac{6^6 \times 6^0}{6^4}$	01	
	$\frac{6^6 \times 1}{6^4}$	01	
	36	01	03
	(b) (i) $\frac{310\,000}{155}$	01	
	2000	02	03
	(ii) 220 x 155	01	
	රු 34100.00	01	02
			11
05.	(a) (i) x +55 (vertically opposite angles) 1+1	02	
	y +62 (alternate angles) 1+1	02	
	z +63 (interior angles) 1+1	02	06
	(ii) $x = a+b$	02	02
	(iii) *if* $a = 28^0$ then DAB = 90^0		
	ABC =900 (allied angles) 1		
	therefor AB $\perp$CB1	03	03
			11
06.	(a) (i) 2x -3 =11 ——— 01		
	2x = 14 ——— 01		
	x = 7 ——— 01	03	03
	(ii) $\frac{11x\ 3}{4}$ = 3 ——— 01		
	11x +3 = 12 ——— 01		
	x = $\frac{9}{11}$ ——— 01	03	03
	(iii) 7a = 49 ——— 01		
	a = 7 ——— 01		
	7 x 2 -3b = 5 ——— 01		
	-3b = -9 ——— 01		
	b =3 ——— 01	05	05
			11

07.	(a) (i) 60 x 80	01	
	4800.00	01	02
	(ii) 72 x 80		
	5760	01	
	5760 - 4800	01	
	960	01	03
	(iii) $\frac{960}{4800}$ x 100 ——— 01		
	20%		03
	(iv) $\frac{25}{100}$ x $\frac{15}{60}$ ——— 01		
	15 ——— 01		
	60 + 15 = 75 ——— 01		03
			11