



## Second Term Test 2018

Grade 9

# MATHEMATICS

Time : 2 ½ hours

Name / Index No.

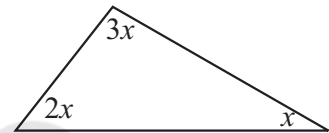
Part I

- 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.

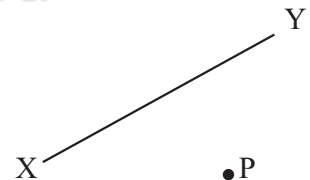
02. Subject  $t$  of the formulae  $v = u + ft$

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



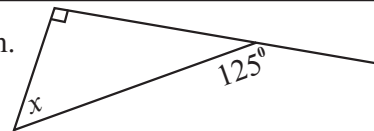
04. (i) What is the smallest whole number when round off to the nearest 10 obtain 170?  
(ii) Round off 2455 to nearest 100.

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



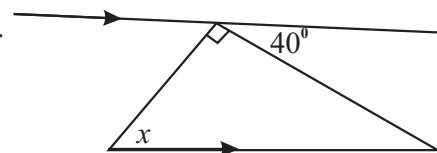
06. Write  $1010101_{\text{two}}$  as base ten number.

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

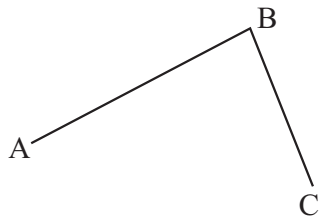


08. Factoric,  $x^2 + x - 42$

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



10. Construct the angle  $\hat{BCD}$  such that  $\hat{ABC} = \hat{BCD}$

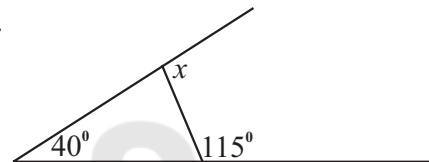


11. 48.5368 (i) Round off to two decimal places.  
(ii) Round off to the nearest whole number.

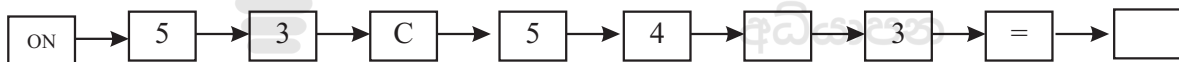
12. What is the amount of Sri Lankan rupees received by a foreigner when exchange 200 Singapore Dollar in a day which pays Rs. 118 for one Singapore dollar?

13. Write  $6.023 \times 10^4$  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.

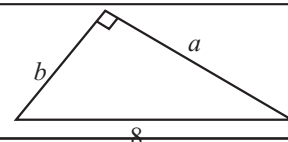
17. Find the value of  $C$  in the formulae  $C = \frac{5}{9} (f - 32)$ , when  $f = 95$ .

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

19. Construct angle,  $\hat{ABC} = 60^\circ$

A \_\_\_\_\_ B

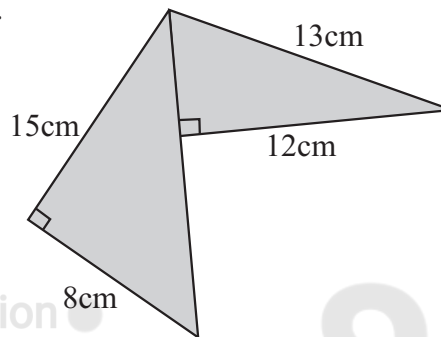
20. Write the Pythagorean relationship for triangle from  $a$ ,  $b$  and  $8$ .



- 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.)

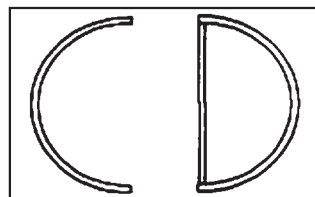
01. (a) Remainder the lesson loci and construction and by Using pair of compasses cm/mm straight edge and showing constructions lines clearly.
- Construct straight line segment  $AB = 8\text{cm}$ . (01m.)
  - Mark point C such that  $\hat{ABC} = 30^\circ$  and  $AC = 8\text{cm}$  (02m.)
  - Construct perpendicular bisector of AC. (02m.)
  - Construct angle bisector of  $\hat{ACB}$ . (02m.)
  - 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.)



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

- Fill in the blanks of the table. (02m.)
  - Draw the graph of the function on a suitable Cartesian plane. (03m.)
  - Draw the straight line passing through the points  $(-2, -1)$  and  $(1, 5)$  on the same Cartesian plane above. (02m.)
  - Write the gradient and intercept of the graph drawn in the part (iii) above. (02m.)
  - What is the relationship of the two graphs? (02m.)
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 1 cm? (03m.)
- (iv) Bulbs attached to lighten inside the glass tube from 6 cm gaps. How many bulbs are there inside the tube? (03m.)
- 

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. 3 10 000 into American dollars when he is foreign tour.

If 1 American Doller = 155.00 Sri Lankan rupees,

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

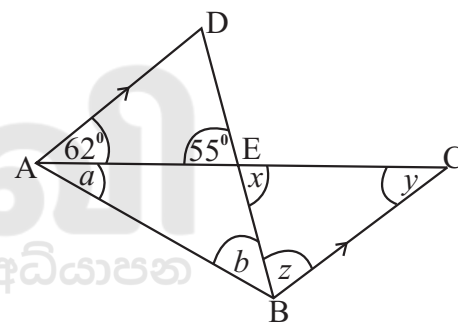
(ii) He bought a mobile phone in his tour of value 220 us dollars. What is its value from Sri Lankan rupees? (02m.)

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



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.)

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 $\frac{450}{3} \times 5$	01	01	02	17.	35 Correct substitution	01	01	02				
02.	$f = \frac{v-u}{f}$ $ft = v - u$	01	01	02	18.	$100^\circ$ $x + 3x + 5x = 180^\circ$	01	01	02				
03.	$x = 30$ $2x + 3x + x = 180^\circ$	01	01	02	19.	Correct construction			02				
04.	(i) 165 (ii) 2500	01	01		20.	$8^2 = a^2 + b^2$			02				
05.	Correct construction			02	<b>Part II</b>								
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	01.	(a) (i) Construction of AB (ii) Construction $\hat{ABC} = 30^\circ$ taking AC = 8cm (iii) perpendicular bisector AC (iv) angle bisector (v) marking P drawing circle of 4 cm	01	01	01	02	10		
07.	$x = 35^\circ$ $x + 90^\circ = 125^\circ$	01	01	02		(b) taking AC = 17 cm taking EA = 5 cm perimeter 60 cm	02	02	02	06			
08.	$(x + 7)(x - 6)$ $x^2 + 7x - 6x - 42$	01	01	02							<u>16</u>		
09.	$x = 50^\circ$ to take alternate angle	01	01	02	02.	(i) -3, 1 (ii) Axes, points, graph (iii) Correct drawing (iv) gradient 2 intercept 3 (v) parallel	02	03	02	01	01	11	
10.	Correct construction			02								<u>11</u>	
11.	(i) 480 . 54 (ii) 49	01	01	02	03.	(a) (i) $\frac{1}{2} \times 2 \times \frac{22}{7} \times 21$ = 66 cm (ii) $66 + 42 = 108$ cm (iii) $30(108 + 66)$ $\text{₹} 5220.00$ (iv) 30	02	01	02	01	02	03	02
12.	Rs. 23600 $118 \times 200$	01	01	02								03	02
13.	60230			02								01	02
14.	$x = 105^\circ$ Finding interior angle	01	01	02								02	03
15.	18			02								<u>11</u>	
16.	$5.8 \times 10^{-3}$			02									

## Answer Sheet

04.	<p>(a) (i) <math>\frac{7^{-3}}{7^{-2}}</math> <math>7^{-1}</math> <math>\frac{1}{7}</math></p> <p>(i) <math>\frac{6^6 \times 6^0}{6^4}</math> <math>\frac{6^6 \times 1}{6^4}</math> 36</p> <p>(b) (i) <math>\frac{310\ 000}{155}</math> 2000</p> <p>(ii) 220 x 155 ඌ 34100.00</p>	01 01 01 01 01 01 01 01 01 01	03 03 03 02 01 02	<u>11</u>
05.	<p>(a) (i) <math>x+55</math> (vertically opposite angles) 1+1 <math>y+62</math> (alternate angles) 1+1 <math>z+63</math> (interior angles) 1+1</p> <p>(ii) <math>x = a+b</math></p> <p>(iii) if <math>a = 28^\circ</math> then <math>DAB = 90^\circ</math> <math>ABC = 90^\circ</math> (allied angles) therefor <math>AB \perp CB</math></p>	02 02 02 02 03	06 02 03	<u>11</u>
06.	<p>(a) (i) <math>2x - 3 = 11</math> _____ 01 <math>2x = 14</math> _____ 01 <math>x = 7</math> _____ 01</p> <p>(ii) <math>\frac{11x - 3}{4} = 3</math> _____ 01 <math>11x + 3 = 12</math> _____ 01 <math>x = \frac{9}{11}</math> _____ 01</p> <p>(iii) <math>7a = 49</math> _____ 01 <math>a = 7</math> _____ 01 <math>7 \times 2 - 3b = 5</math> _____ 01 <math>-3b = -9</math> _____ 01 <math>b = 3</math> _____ 01</p>	03 03 03 05	03 03	<u>05</u> <u>11</u>
07.	<p>(a) (i) <math>60 \times 80</math> 4800.00</p> <p>(ii) <math>72 \times 80</math> 5760 <math>5760 - 4800</math> 960</p> <p>(iii) <math>\frac{960}{4800} \times 100</math> _____ 01 20%</p> <p>(iv) <math>\frac{\cancel{25}}{100} \times \frac{\cancel{60}}{\cancel{60}}</math> _____ 01 15 _____ 01 <math>60 + 15 = 75</math> _____ 01</p>	01 01 01 01 01 01 01 01 01	02 03 03 03 03	<u>11</u>

தரம் 01 - 10

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ஆரம்பம் - 01.12.2024

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