The City School

Unified End of Year Examinations 2017-18

SCHOOL NAME	

INDEX NUMBER					

MATHEMATICS	**May 2018**
CLASS 8	**2 hours**

READ THESE INSTRUCTIONS FIRST

- Write your index number and school/campus clearly in the space provided.
- Read and follow the instructions of the questions given.
- Answer **all** question in the spaces provided.
- Check your answer paper before you hand it in.
- Calculators are **not** allowed.
- Marks for each section are shown below.
- Do not use staples, paper clips, glue or correction fluid.

-------------------------- For Examiner's use only --------------------------

	Section A : Computation (50)					Section B: Problem Solving (50)					Total
Question #	1	2	3	4	5	6	7	8	9	10	
Max. Marks	10	10	10	10	10	10	10	10	10	10	100
Marks Obtained											

Percentage		Grade	

Invigilated by:_____   **Marked by:**_____   **Marks tallied by:** _____

Section A	Marks 50

Q.1 Multiple choice questions. [__/10]

i. Identify the points that do not lie on the line x = 3.

   A. (3, 0)

   B. (3, 3)

   C. (3, -6)

   D. (4, 3)

ii. The y- intercept of the equation y= 8x – 6 is

   A. 8

   B. 8x

   C. -6

   D. None of the above

iii. The slope of the line y = c

   A. 1

   B. 0

   C. C

   D. None of the above

iv. Which of the following is correct?

   A. $(a -b)^2 = a^2 + 2ab + b^2$

   B. $(a-b)^2 = a^2 - b^2$

   C. $(a-b)^2 = a^2 - 2ab + b^2$

   D. $(a-b)^2 = a^2 + 2ab - b^2$

v. The expanded form of of $p^2(q + p^3)$ is

A. $p^2q + p^6$

B. $p^2q + p^5$

C. $pq + p$

D. $p^2 + p^2p^3$

vi. The roots of $(g - 5)(g + 4) = 0$ are

A. 5 , 4

B. -5, -4

C. -5, 4

D. 5, -4

vii. Simplified form of $\frac{3x+3}{3}$ is

A. $\frac{x}{3}$

B. $\frac{x+1}{3}$

C. $x + 1$

D. $x + 3$

viii. At what time would the train reach its destination if it started it journey at 0543 and travelled for 7 hours and 58 minutes?

A. 13 41

B. 13 01

C. 12 41

D. 12 01

ix. A cyclist takes 20 minutes to travel a distance of 16 km. The total distance travelled in 50 minutes is

A. 40 km

B. 62.5 km

C. 42 km

D. 46 km

x. The ground floor of the building is drawn to scale 1cm : 10 m. The length of 8.3 cm on the scale represents _____m in real life.

A. 8.3

B. 0.83

C. 830

D. 83

Q.2 Expand the following algebraic expressions and simplify where possible. [10]

a. $3(6x + 3) - (8 - x)$ [__/2]

b. $(5x - 3)^2 - 2x$ [__/2]

c. $-4p^2 + (6p^2 + 3)(8 - p)$ [___/3]

d. Use algebraic identity to evaluate the following. [___/3]

97 x 103

Q.3 Factorize the following completely. [10]

    a. $24\,a^2 + 16\,a$ [__/2]

    b. $m^2n - mnr - 2mr + 2r^2$ [__/3]

    c. $2k^2 - 32$ [__/3]

    d. Find the value of 'h' in the equation $x^2 - 5x + h = 0$, if $x = 4$ is the solution of the equation. [__/2]

Q.4 Solve the algebraic fractions giving your answer in the simplest form. [10]

a. $\dfrac{12pq-4pr}{2(3q-r)}$ [__/3]

b. $\dfrac{c-a}{5}+\dfrac{2c+3}{3}$ [__/3]

c. $\dfrac{12b^4a^5}{3a^2}\div\dfrac{4bd}{3ad}\times\dfrac{14d^4}{7ba}$ [__/4]

Q.5   **[10]**

   a. A bus leaves town "x" at 20 00 and arrives in town "y" at 08 30 the next day.

      i.   Calculate the time taken for the journey   **[__/2]**

      ii.   Calculate the average speed of the bus, given that the distance from town X to town Y is 625 km.   **[__/3]**

b. Ali is completing his assignment of solving the following simultaneous equations using graphical method. [__/5]
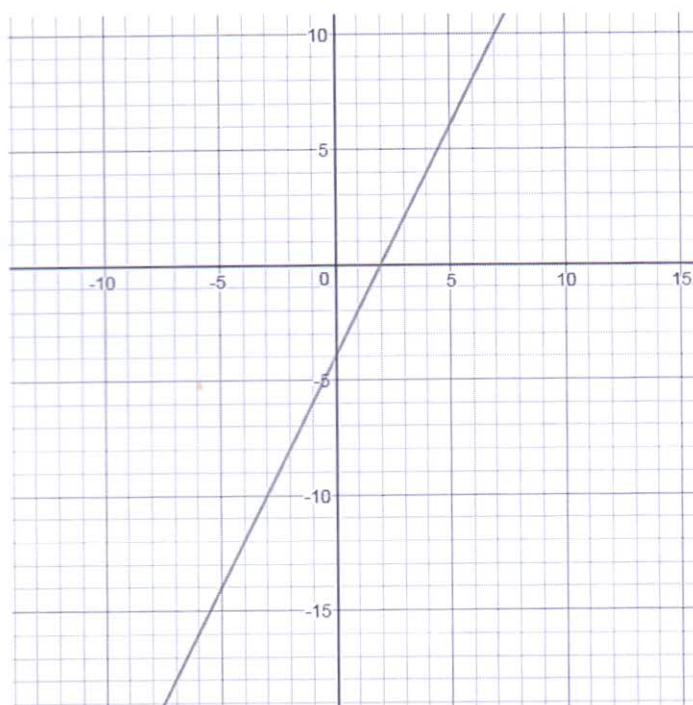
$$y = 2x - 4$$
$$y = 3x - 1$$

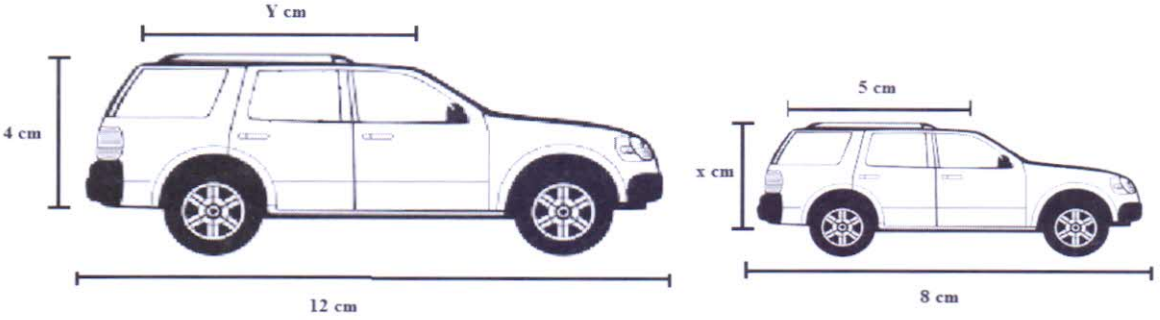He was able to plot the line for the equation: $y = 2x - 4$

Complete his assignment by plotting the line for the equation $y = 3x - 1$ to find the solution.

X			
Y= 3x - 1			

Section B	Marks 50

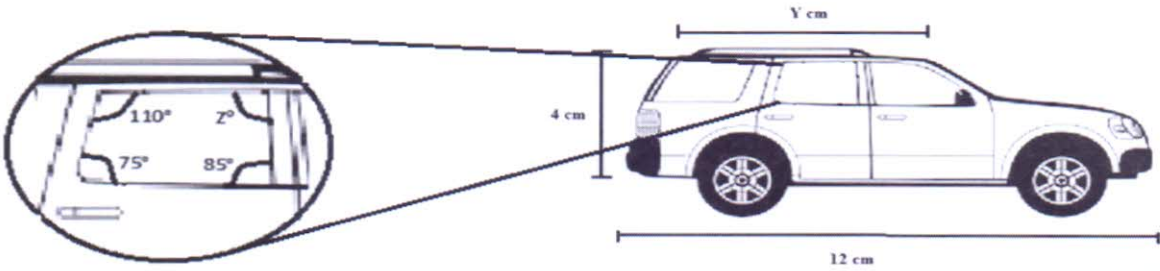## Q.6   [10]

a. Calculate the unknown lengths and angles for the two similar car models.

i.   X?   [__/3]

ii. Y?   [__/3]

b. The magnified image of the window of the car model is given below. Calculate the value of the forth corner of the window.
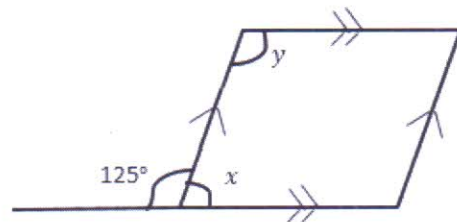

Z° =_____ [__/2]

c. A map of a region is drawn to a scale of 1cm to 5km. A reservoir has an area of 16 cm² on the map. Calculate the actual area of reservoir in km². [__/2]

Q.7 [10]

a. Calculate the unknown values of the figure given below.

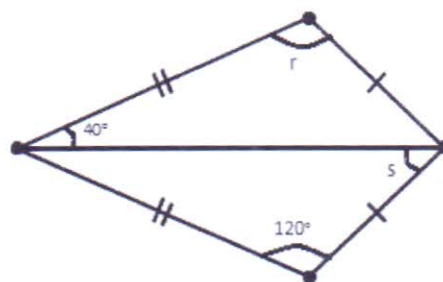And state a proper reason for your answer.
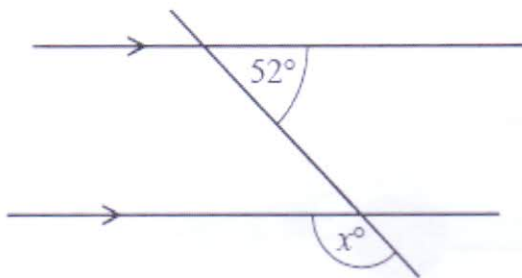

i. X? [__/2]

ii. Y? [__/2]

b. Find the missing angles of the given shape and state a proper reason for your answer.

R =_____   [__/2]

S= _____   [__/2]

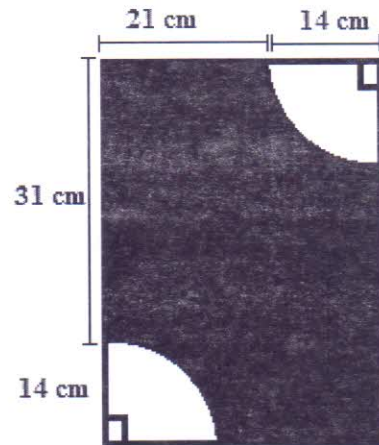**c.** In the diagram, a straight line intersects two parallel lines. Find the value of x.   [__/2]

Q.8 [10]

   a. Find the Area and perimeter of the shaded portion of the given shape.

      Take π to be $\frac{22}{7}$

      i.   Area of the shaded region.   **[__/4]**

      ii.   Perimeter of the shaded part   **[__/3]**

   b. Find the diameter of the circle if its perimeter is 352 cm.   **[__/3]**

Q.9 The table below shows number of events taking place per day in a city over a period of 40 days. [10]

Number of Events	1	2	3	4	5	6
Number of Days	12	9	8	2	5	4

a. Draw a histogram to show the results. [__/4]

b. How many events took place in the city altogether? [__/2]

c. Calculate mean and mode of the distribution. [__/2]

d. Find the median of the following set of data. [__/2]

13, 10, 10, 14, 15, 18, 11, 20

Q.10   **[10]**

   a.   When a number is divided by 4 and has 28 added to it, the result is twice the number.

        Find the number.   **[__/3]**

   b.   Usman's age is $\frac{4}{5}$ that of Salman. The sum of their ages after 5 years will be 28. Calculate

        Salman's age now.   **[__/3]**

   c.   The length and breadth of a rectangle are $(3x)$ and $(2x - 2)$ respectively.

        If the area of the rectangle is 120 cm^2, find the value of length and the breadth. **[__/4]**