The City School

North Nazimabad Boys Campus

**Topic: Mixed Concept (Paper II)**

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**Subject: Mathematics**

**Grade: 09 S- N**

Q1: Solve the following equations, where possible giving your answers correct to 2 decimal places where necessary.

1. $\frac{5}{x+1}+ \frac{8}{x+3}=5$ b. (3*x*-1)(2*x*+5) = (4 - *x*2)
2. $\frac{8}{x-1}+ \frac{3}{x-2}=3$ d. 5*x*2+4*x*+5 = 3(1-3*x*)

Q2: A ladder 5.8 m long stands on level ground and its top just reaches the top of a wall 4.1 m high. How far is the foot of the ladder from the wall?

Q3: The length of the diagonal of a rectangular board is 61 m and the length of one side is 60 m.  Find:

a.  the width of the board
b.  area of the board

Q4: 200 students took a test. The cumulative frequency graph information about their marks is shown below:

Use your graph to estimate

1. Median, Lower Quartile, Upper Quartile
2. Inter Quartile Range

20th and 80th Percentile

Q5: The table shows the marks obtained in tests of English and Mathematics by 140 students.



1. Copy and complete the cumulative frequency table below



1. Using a scale of 2 cm to represent 20 marks, draw a horizontal *x*-axis for 0 ≤ *x* ≤ 100.

Using a scale of 2 cm to represent 20 pupils, draw a vertical axis for values from 0 to 140.

On your axes, draw a label both smooth cumulative frequency curve to illustrate this information.

1. Use your curves to find
2. the upper and lower quartile mark for English and Mathematics.
3. the inter quartile range for English and Mathematics.
4. State, with a reason, which you think is the easier test**.**

Q6: Find the unknown values in the given figure. Give your answer correct to two significant figures or nearest degree

1. 

Q7: Given circle has a radius of 11cm. Take π=3.142 to calculate



i) the length of the minor arc AB

ii) the area of the minor sector AOB

Q8: Ali walked a distance of 25km from A to B, at an average speed of *x* km/hr. Write down an expression for the time in hours, he took for the journey from A to B.

He returned by the same route but his average speed was 2km/hr less. Write down an expression for the time, in hours, he took the journey from A to B.

Given that the difference between the two times was 35minutes, form an equation in *v* and show that it reduced to 7*x*2-14*x*-600=0

Solve the above equation correct to 2 decimal places. Hence find the total time taken for the men to walk , giving your answer correct to the nearest minute