

City International School

FIRST TERMINAL EXAMINATION – 2015 - 2016

Date : 03/08/2015

Marks : 40

Std : IX

Subject : Mathematics

Time : 1hr 15min

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is to be spent in reading the question paper.

The time given at the head of this paper is the time allowed for writing the answers.

Attempt all questions from Section A and any two questions from Section B.

All working including rough work must be clearly shown and must be done on the same sheet as the rest of the answer.

Omission of essential working will result in loss of marks.

The intended marks for questions or parts of questions are given in brackets ()

SECTION A [20 MARKS]

Q. 1 a. Rationalize the denominator: $\frac{30}{5\sqrt{3} - 3\sqrt{5}}$ (3)

b. Solve: $\frac{x+7}{3} = 1 + \frac{3x-2}{5}$ (3)

c. Expand the following. (4)

i. $(3x - 2y)^3$ ii. $(2a - \frac{1}{3a})^2$

Q. 2 a. Solve: $4m + 3n + 24 = 0$; $7m - 2n = -13$ (3)

b. If each interior angle of a regular polygon is double the exterior angle, find the number of sides of the polygon. (3)

c. Factorize the following: (4)

i. $a^3 - 2a^2 + 5a - 10$ ii. $3x^2 - 8x + 4$

SECTION B [20 MARKS]

Attempt any two questions in this section.

Q. 3 a. Solve: $\frac{4}{5}(x + 1) = \frac{5}{6}(2x - 1) + \frac{14}{3}$ (3)

- b. Two angles of an eight sided polygon are 152° and 166° respectively. (3)
If the remaining angles are equal, find each of the remaining angles.

- c. If $x + \frac{1}{x} = 4$, find the values of (4)

i. $x^2 + \frac{1}{x^2}$ ii. $x - \frac{1}{x}$ iii. $x^3 + \frac{1}{x^3}$

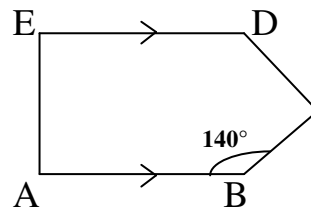
- Q. 4** a. Factorize: $(2z - y)^2 - 11(2x - y) + 28$ (3)

- b. Solve : $\frac{7}{x} + \frac{8}{y} = 2$; $\frac{2}{x} + \frac{12}{y} = 20$ (3)

- c. Using ruler and compasses only, Construct ΔABC , in which $BC = 6.5\text{cm}$, (4)
 $\angle B = 120^\circ$ and $\angle C = 60^\circ$. Construct a circumcircle.

- Q. 5** a. If $\frac{2-\sqrt{2}}{2+\sqrt{2}} = x + y\sqrt{2}$, find the values of the rational numbers x and y. (3)

- b. In a pentagon ABCDE, AB is parallel to ED and $\angle B = 140^\circ$. (3)
Find the angles C and D if $\angle C : \angle D = 5 : 6$



- c. The difference between the ages of two sisters is 10 years. 15 years ago (4)
their ages were in the ratio 2:1. Find their present ages.