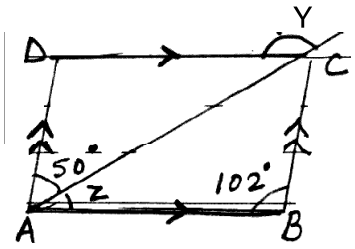
b. In the given figure, ABCD is a parallelogram.

Find the values of y and z.



c. A path of uniform width, 2.5 m, runs around the inside of a rectangular field 30 m by 27m. Find the area of the path. (4)

Question 9

a. Factorise : i. $7 + 10\,(x - y) - 8\,(x - y)^2$ (3x2)

ii. $2a^2b^2 - 98b^4$

b. The measure of each interior angle of a regular polygon in five times the measure of its interior angle.

Find : i. measure of each interior angle (4)

ii. measure of each interior angle

iii. number of sides in the polygon

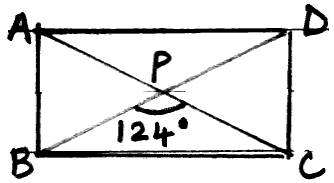
Question 10

a. Divide $10x^4 - 19x^3 + 17x^2 + 15x - 42$ by $2x^2 - 3x + 5$ (3)

b. Find the square root of 7 correct to two decimal places. Hence, find the value of $4 - \sqrt{7}$ (3)

c. ABCD is a rectangle. If $\angle BPC = 124^\circ$ calculate :

i. $\angle BAP$ ii. $\angle ADP$



Quarterly Examination - 2018-19

MATHEMATICS

Class : VIII

Time : 2 Hrs. + 15 mints reading time **Full Marks : 80**

Section A

Question 1

a. If 923x783 is divisible by 11, what is the value of digit x (3)

b. Find the values of the letters in each of the following and give reasons for the steps involved.

$$\begin{array}{r} 12A \\ +\ 6AB \\ \hline A09 \end{array} \qquad \begin{array}{r} AB \\ \times\ 5 \\ \hline CAB \end{array}$$

c. i. Evaluate : $\sqrt[3]{216 \times -343}$

ii. Find the smallest number by which 12748 be multiplied so that the product is a perfect square.

Question 2

a. Divide : $-50\,a^2b^3$ by $15a^4b^2$ (1)

$2x^3 - 8x^2 + 5x - 8$ by $x - 2$ (2)

b. i. On a number line mark the points

$\frac{-5}{3}$, $\frac{4}{3}$, -1

ii. Insert two rational numbers between $\frac{3}{5}$ and $\frac{4}{7}$ (2x2)

c. One angle of a seven-sided polygon is 114". If the remaining six angles are equal, find each equal angle. (3)

Question 3

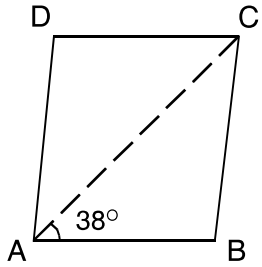
a. Factorise : i. $m - 1 - (m-1)^2 + am - a$ (2x3)

ii. $x^2 - 2xy + y^2 - z^2$

iii. $5 - 4x\,(1 + 3x)$

b. ABCD is a rhombus. If $\angle BAC = 38^\circ$, find : (4)

i. $\angle ACB$ ii. $\angle DAC$ iii. $\angle ADC$ (give reasons)



Question 4

a. A wire, when bent in the form of a square, encloses an area of 196 cm^2. If the same wire is bent to form a circle, find the area of the circle. (4)

b. If $m - \frac{1}{m} = 5$, find :

i. $m^2 + \frac{1}{m^2}$ ii. $m^4 + \frac{1}{m^4}$ iii. $m^2 - \frac{1}{m^2}$ (2x3)

SECTION B (40 Marks)

Answer any four questions

Question 5

a. Find the square root of 0.602 correct to two places of decimal (3)

b. i. Check the divisibility of the following numbers by 4 or 8

i. 47596 ii. 593024

ii. Write a pythogoreon triplet whose one number is 63.

iii. How many natural numbers lie between square of 90 and 91. (3)

c. Find the least number that must be subtracted from 23497 to make it a perfect square.

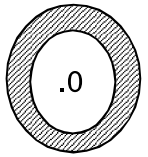
Question 6

a. Name the multiplication property of rational numbers shown below :

i. $\frac{-7}{12} \times \frac{5}{8} = \frac{5}{8} \times \frac{-7}{12}$ ii. $\frac{3}{4} \times \left(\frac{-4}{5} + \frac{5}{6}\right) = \frac{3}{4} \times \frac{-4}{5} + \frac{3}{4} \times \frac{5}{6}$

b. Use rational numbers $\frac{-4}{5}$, $\frac{7}{10}$ and $\frac{11}{-20}$ to verify the associative property of the addition of rational nos. (3)

c. The shaded portion in the figure shows a circular path enclosed by two concentric circles. If the inner circumference of the path is 176 cm and the uniform width of the circular path is 3.5 m; find the area of the path. (4)



d. Write the additive inverse of : $\frac{-4}{-13}$; $\frac{4}{-9}$ (2)

Question 7

a. Using suitable identities, evaluate the following

i. 10.3 x 9.7 ii. $\frac{103^2 - 97^2}{200}$ iii. 107 x 93 (2x3)

b. If $a^2 + \frac{1}{a^2} = 2$; find : i. $a + \frac{1}{a}$ ii. $a - \frac{1}{a}$ (2+2)

Question 8

a. Evaluate : $(2x - 5y)(2x + 3y)$ for $x = 2$ and $y = 3$ (2)