

2015-16
 MODERN PUBLIC SCHOOL
 HOLIDAY HOMEWORK
 CLASS - XI
 SUB - MATHS

Q1 Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ $A = \{1, 2, 3, 4\}$
 $B = \{2, 4, 6, 8\}$ and $C = \{3, 4, 5, 6\}$ Find

(a) B' (b) $(B-C)'$

(c) $(A \cup C)'$ (d) $(A' \cap C')$

Q2 Write the power set of $\{0, \phi, \{\phi\}\}$

Q3 Draw appropriate Venn diagram for each of the following

(i) $(A \cup B)'$ (ii) $A' \cup B'$

Q4 35 children of a class draw a world map. 26 use blue colour and some use green colour. If 19 use both the colours and each student uses at least one colour, find the number of children who use the green colour.

Q5 Out of 500 car owners investigated, 400 owned car A and 200 owned car B, 50 owned both A and B cars. Is this data correct? Car A uses CNG as a fuel and car B uses petrol as a fuel. Which car is eco friendly and why?

Q6 Find the square root of $\sqrt{2 - 2\sqrt{3}i}$

Q7 If $a + ib = \frac{(x+i)^2}{2x^2+1}$ prove that $a^2 + b^2 = \frac{(x^2+1)^2}{(2x^2+1)^2}$

Q8 Represent $z = 2 - 2\sqrt{3}i$ in polar form

Q9 Convert the complex number $z = \frac{1-i}{\cos \frac{\pi}{3} + i \sin \frac{\pi}{3}}$ in the polar form

Q10 Solve the quadratic equation

(i) $2x^2 + \sqrt{5}ix - i = 0$ (ii) $27x^2 - 10x + 1 = 0$