

2018-19

MODERN PUBLIC SCHOOL SEC-37 FBD

Topic

Date

Holiday Homework  
Class - XI  
Subject - Maths

Q1 Find the square roots of the following complex numbers

(i)  $4 - 4\sqrt{3}i$  (ii)  $-7 + 24i$

Q2 If  $Z = \cos\theta + i\sin\theta$  then find the value of  $\frac{1+Z}{1-Z}$

Q3 Convert the following number in to polar form  $\frac{5-i}{2-3i}$

Q4 Solve the following equations

(i)  $\sin x + \sin 3x + \sin 5x = 0$

(ii)  $3\tan x + \cot x = 5 \operatorname{cosec} x$

Q5 Prove that

$$\cos 5x = 16\cos^5 x - 20\cos^3 x + 5\cos x$$

Q6 Prove that

$$\tan\left(\frac{\pi}{4} + x\right) + \tan\left(\frac{\pi}{4} - x\right) = 2\sec x$$

Q7 Prove that

$$\tan 50^\circ = \tan 40^\circ + 2\tan 10^\circ$$

Q8 Given three sets A, B and C, draw appropriate Venn diagram for each of the following

- (i)  $A \cap (B \cup C)'$   
(ii)  $(A \cap B) \cup (A \cap C)$

Q9 For any three sets A, B and C prove that  
 $A \cap (B - C) = (A \cap B) - (A \cap C)$

Q10 Evaluate the following

- (i) (i)  $4n+3$  (ii)  $(\sqrt{-1})^{4n+7}$

NOTE Holiday Homework to be submitted latest by 4<sup>th</sup> July '18.