CLASS-X SUBJECT- Maths

Summer Holidays Homework 2016-17

Friends

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Q.1 Find the largest number that divides 2053 and 967 leaves a remainder of 5 and 7.

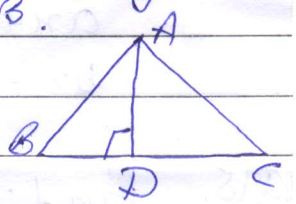
Q2. Use Euclid's division algorithm to find the HCF of 657 and 963.

Q3. Prove that $\frac{2\sqrt{3}}{5}$ is irrational.

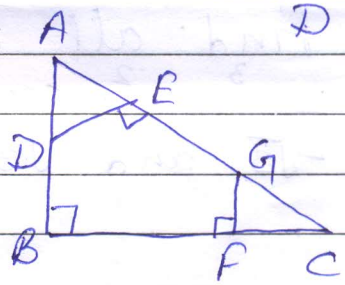
Q4. Show that any positive odd integer is of the form $4q+1$ and $4q+3$ where q is a positive integer.

Q5. If α, β are zeroes of the polynomial $x^2-2x-15$, then form a quadratic polynomial whose zeroes are 2α and 2β.

Q6. In given fig. $AD \perp BC$ and $BD = \frac{1}{3}CD$. Prove that $2CA^2 = 2AB^2 + BC^2$



Q7. In given fig. $AB \perp BC$, $FG \perp BC$ and $DE \perp AC$. Prove that $\triangle ADE \sim \triangle GCF$.



Q8. In an isosceles triangle ABC with $AB = AC$ and $BD \perp AC$. Prove that $BD^2 - CD^2 = 2CD \cdot AD$.

Q9. Determine the value of K so that the following linear equations have no solution :-

$(3K+1)x + 3y - 2 = 0$; $(K^2+1)x + (K-2)y - 5 = 0$

Q10. If α and β are zeroes of the quadratic polynomial $x^2 - 6x + a$; find the value of 'a' if $3\alpha + 2\beta = 20$.

Q11. Divide $30x^4 + 11x^3 - 82x^2 - 12x + 48$ by $(3x^2 + 2x - 4)$ and verify the result by division algorithm.

Q12. The diagonals of a trapezium ABCD with AB || DC intersect each other at point O. If AB = 2CD, find the ratio of the areas of $\triangle AOB$ and $\triangle COD$.

Q13. A boat covers 32 km upstream and 36 km downstream in 7 hours. Also it covers 40 km upstream and 48 km downstream in 9 hours. Find the speed of the boat in still water and that of the stream.

Q14. Solve the equations by method of substitution, elimination and cross-multiplication :-

$$ax + by = a - b$$
$$bx - ay = a + b$$

Q15. Find all the zeroes of the polynomial $2x^3 + x^2 - 6x - 3$, if two of its zeroes are $-\sqrt{3}$ and $\sqrt{3}$.

Practice Work ⇒ Revise U-1, 2, 3, 6 complete in Rough Note book.

Creative work ⇒ Use A3 size sheet, Write the statement and proof of Pythagoras theorem.

Note 1. Date of correction of H.W upto 3rd July 2016
2. Revise Ch-1, 2, 3 and 8 for Class Test