**INDIAN SCHOOL AL WADI AL KABIR**

 **Dept. Of Mathematics 2018-19, Class IX**

**HOLIDAY HOME WORK**

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|  **Questions Ans**  |
| 1 | Simplify : $\sqrt[4]{\left(\frac{132}{143}\right)^{-2}}$ | $$\frac{\sqrt{13}}{2\sqrt{3}}$$ |
| 2. | Factorize : 6 –x- $X^{2}$ | $$\left(2-x\right)\left(3+x\right)$$ |
| 3. | Using Heron’s formula find the area of an equilateral triangle with side 16cm. | 64$\sqrt{3}$cm2 |
| 4. | Two supplementary angles are in the ratio of 2 : 7.Find the measures of angles. | $40^{0}$ and $140^{0}$ |
| 5. | If p+ q = 12 and pq = 27, find the value of $p^{3}$ + $q^{3}$ | 756 |
| 6. | Find the value of k for which the point $\left(-1, 3\right)$ lies on the graph of the equation 2x – y + k = 0 |  5 |
| 7. | Find the coordinates of the points where the line representing the equation $\frac{x}{4 }$ =1 - $\frac{y}{6 }$ cuts the x-axis and the y-axis. | Point on the x-axis (4,0) and the point on the y-axis (0,6) |
| 8. | Prove that sum of the measures of all the three angles of a triangle is $189^{0}.$ | Systematic poof |
| 9. | Find a and b, if $\frac{2\sqrt{5}+\sqrt{3}}{2\sqrt{5}-\sqrt{3}}$ + $\frac{2\sqrt{5}-\sqrt{3}}{2\sqrt{5}+\sqrt{3}}$ = a + $\sqrt{15}$ b. | a = $\frac{46}{17}$ and b=0 |
| 10. | Prove that the line segment joining the mid points of the two sides of a triangle is parallel to the third side and is half of it. | Systematic poof |
| 11. | In the mathematics test given to 15 students, the following marks are(out of 80 ) are recorded: 41, 39, 48, 52, 46, 62, 54, 40, 78, 52, 76, 40, 42, 52, 60. Find the mean, median and mode of this data. | Mean = 52.13Median= 52 Mode= 52 |
| 12 | A rhombus garden is 52m. One of the diagonal is 24m.Find the area of the garden. | 120m2 |

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|  **Questions Ans**  |
| 13 | In the figure given below X and Y are the mid-points of AC and BC and AX = CY. Show that AC = BC.   |  |
| 14. |  image195.jpegIn the above fig. In figure, if AB **ا ا** CD, $∠ $APQ = 50$ᵒ$ and $∠ $PRD = 127$ᵒ$.  Find the values of x and y.  | X =50Y=77 |
| 15. | Without actually calculating the cubes , find the value of : (35)3 + (-15)3 + (-20)3 | 31500 |
| 16. | In the figure given below bisectors of$ ∠ $B and $∠$C of a triangle ABC intersect each other at the point O. . Prove that$ ∠ $BOC = 90˚ +$ \frac{1}{2}$ ∠A A  O B C  |  |
| 17. | Express 0.34$ \overbar{5} $ in $\frac{p}{q}$ form, where p and q are integers and q$\ne $ 0. | $$\frac{311}{900}$$ |
| 18. | The marks obtained (out of 100) by a class of 75 students are given below.Construct a histogram and frequency polygon to represent the following data.

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| Marks | 10-20 | 20-30 | 30-50 | 50-70 | 70-100 |
| Number of students | 4 | 15 | 12 | 26 | 18 |

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| 19. | Using Remainder theorem, factorize: x3 – 9x2 + 23x – 15. | (x-1)(x-5)(x-3) |
| 20. | Represent $\sqrt{9.5}$ on the number line. |  |
| 21. |  P S Q R In the above figure PQ = PR. Show that PS ˃PQ  |  |
| 22. |  | 1 |
| 23. | Three coins tossed simultaneously 200 times with the following frequencies ofdifferent outcomes.

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| --- | --- | --- | --- | --- |
| Out come | No head | one head | two head | three head |
| Frequency | 48 | 72 | 44 | 36 |

If the coin tossed again then find the probability of :(i) getting exactly two heads(ii) getting at least two heads (iii) getting at most two heads(iv) getting a tail | i)$\frac{11}{50}$ii)$\frac{2}{5}$iii)$\frac{41}{50}$iv)$\frac{6}{25}$ |
| 24. | (a) Write any two Euclid’s axioms (b) Write Euclid’s postulates  |  |
| 25. |  |  |