

Maths Work Sheet

Class - X

Chapter:- Quadratic Equations & Arithmetic Progressions

Q01 :} The equation $x^2 + 4x + k = 0$ has real roots. Find the value of k .

Q02 :} If $D = 0$, the roots are _____ and each of them is _____. [Note: The equation is $ax^2 + bx + c = 0$]

Q03 :} Comment on the nature of the roots without actually finding the roots if $4x^2 + 12x + 9 = 0$.

Q04 :} If $ax^2 + bx + c = 0$, has equal roots, then $c =$ _____.

Q05 :} The positive value of k for which the equation $x^2 + kx + 64 = 0$ has equal roots is _____.

Q06 :} The sum of the roots of the Q.E. $x^2 + kx + 6 = 0$ is -5 then $k =$ _____.

Q07 :} The product of the roots of the Q.E. $3x^2 + 23x + k = 0$ is 20, then $k =$ _____.

Q08 :} If α and β are the roots of the Q.E. $x^2 - 7x + 10 = 0$ then the Q.E. where roots are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$ is _____.

Q09 :} The 17th term of an A.P $2\frac{1}{2}, 5, 7\frac{1}{2}, 10, \dots$ is _____.

Q10 :} Which term of the A.P 70, 63, 56, 49, is 21?

Q11 :} The 23rd term from the last term of the A.P. $7, 9\frac{1}{2}, 12, 14\frac{1}{2}, 17, \dots 257$ is _____.

Q12 :} The 20th term of an A.P exceeds the 15th term by 10. The common difference is _____.

Q13 :} Third term of an A.P is 17 and the 10th term is 50 less than the 20th term. Form the A.P.

Q14 :} Which of the following can form an A.P:

- a) Simple Interest on a sum over years
- b) Compound Interest on a sum over years
- c) Both of these
- d) Neither of these

Q15 :} Allen saves Rs. 10 in first week, 22 in the second week, 34 in the third week, 46 in the fourth week and so on.... He save Rs. 130 in the _____ week.

Q16 :} Arjun starts a job with basic salary of Rs. 12000 and an yearly increment of Rs. 1000. His salary in the 5th year will be _____.

- Q17 :}** The n^{th} term of an A.P is given as $tn = 3n + 7$. The common difference is ____.
- Q18 :}** Two A.Ps have the same common difference. The difference between their 70^{th} terms is 140. The difference between their 100^{th} terms is ____.
- Q19 :}** $2p + 1, 13, 5p - 3$ are three consecutive terms of an A.P. The value of p is ____.
- Q20 :}** Three consecutive terms of an A.P are $2x, x+10$ and $3x+2$. Then $x =$ ____.
- Q21 :}** Write down the value of $t_{30} - t_{10}$ for the A.P 3, 7, 11, 15, 19
- Q22 :}** The no. of terms in the A.P 7, 2, -3, -8 ... - 393 is ____.
- Q23 :}** The middle term of the A.P 6, 11, 16, 21 ... 506 is ____.
- Q24 :}** Which term of the A.P 32, 35, 38 ... is 120 less than its 80^{th} term.
- Q25 :}** Which term of the A.P $95, 92\frac{2}{3}, 90\frac{1}{3} \dots$ is the first negative term?
- Q26 :}** Find the no. of 3 digit nos. which are divisible by 7.
- Q27 :}** Find the no. of 3 digit nos. which are not divisible by 5.
- Q28 :}** Find the no. of 3 digit nos. which are divisible by both 3 and 5.
- Q29 :}** Find the no. of 4 digit nos. which leave the remainder 3 when divided by 5.
- Q30 :}** Find the no. of multiples of 6 lying between 75 and 750.
- Q31 :}** Find the roots by Quadratic Formula: $x^2 - 23x + 90 = 0$.
- Q32 :}** Find the roots by Completion of Square Method: $3x^2 - 19x + 20 = 0$.