1. Find the [HCF×LCM] for the number 100 and 190

2. If 1 is a zero of the polynomial $p(x) = ax^2 - 3(a-1) x-1$, then find the value of a.

3. In ΔLMN, $\angle L = 50^0$ and $\angle N = 60^0$. If ΔLMN ~ ΔPQR, then find $\angle Q$

4. If $\sec^2 \theta$ $(1 + \sin \theta)$ $(1- \sin \theta) = k$, then find k

5. If the diameter of a semicircular protractor is 14 cm, what is its perimeter.

6. Find the number of solutions of the following pair of linear equations: $x + 2y - 8 = 0$ and $2x + 4y = 1$

7. If one of the roots of the quadratic equation $2x^2 + px - 4 = 0$ is 4, then the value of p is:

8. If the 17th term of an AP exceeds the 10th term by 7, then the common difference is:

9. Find all the zeroes of the polynomial $x^3 + 3x^2 - 2x - 6$.

10. In the A.P. 3, 15, 27, 39, … which term will be 120 more than the twenty first term?

11. In the figure below, Δ ABD is a right triangle, 90 degree at A and AC ^ BD. Prove that $AB^2 = BC$.

12. Calculate tan 60 practically.

13. The sum of two numbers is 8. if the sum of their reciprocals is What are the nos.

14. Draw a right triangle in which sides (other than hypotenuse) are of lengths 8 cm and 6 cm. Thereafter draw another triangle where sides are times the corresponding sides of the first triangle.

15. In the figure below, M is mid-point of CD. The line BM intersects AC at L and AD produced at E. Prove that EL = 2 BL.

16. Find the area of the quadrilateral ABCD whose vertices are A(-4, -2), B(-3, -5), C(3, -2) and D(2,3)

17. If -5 is a root of the quadratic equation $2x^2 + px - 15 = 0$ and the equation $p(x^2 +x) + k = 0$ has discriminant zero, find p and k.

18. Prove that the lengths of the tangents drawn from an external point to a circle are equal. Using the above theorem, prove than If quadrilateral ABCD is circumscribing a circle, then AB + CD = AD + BC

19. A plane when flying at a height of 3125 m from the ground passes vertically below another plane at an instant when the angles of elevation of the two planes from the same point on the ground are 30° and 60° respectively. Find the length of ground between the two planes at that instant.