1) Find the rules of equation $x^2 - 3x - (m+3) = 0$
2) Solve: $x^2 - 5x + 3 = 0$
3) Find the second term of AP whose sum of the m terms is given by $2m^2 + 3m$.
4) Find the value of p for which the roots of the equation $px(x-2) + 6 = 0$, are equal.
5) How many two-digit numbers are divisible by 3?
6) Find the value of k, if the point P(2,4) is equidistant from the point A(5,8) and B(k,7).
7) The angle of depression of the top and bottom of a tower as seen from the top of a 60m cliff are $45°$ and $60°$ respectively. Find the height of the tower.
8) Draw a triangle ABC with sides BC = 7cm, AB = 6cm and angle ABC = $60°$ .construct a triangle whose sides are ¾ of the corresponding sides of triangle ABC. Also write steps of construction.
9) A sum of rupees 1400 is to be used to give seven cash prizes to students of a school for their overall academic performance. If each prize is rupees 40 less than the preceding prize, find the value of each of the prizes.
10) Determine the ratio in which the line $3x + y - 9 = 0$ divides the line segment joining the points (1,3) and (2,7).
11) Two tangents PA and PB are drawn from an external point P to a circle with the centre O.
12) Find the relation between x and y such that the point P(x , y) is equidistant from the points A(1,4) and B(-1,2).
13) The sum of 5th and 9th terms of an AP is 72 and the sum of 7th and 12th term is 27. Find the AP
14) The angles of elevation of the top of a tower from two points at a distance of 4m and 9m from the base of the tower and in the same straight line with the complementary. Prove that the height of the tower is 6m.
15) Prove that the perpendicular at the point of contact to the tangent to a circle passes through the centre .
16) Prove that the tangent at any point of a circle is perpendicular to the radius through the point of contact.
17) Two poles of equal heights are standing opposite to each other on either side of the road which is 100m wide from a point between them on the road, the angles of elevation of the top of the poles are $60°$ and $30°$ respectively, Find the height of the poles.
18) Solve for x : $\frac{1}{a+b+x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x}$; a≠0 ,b≠0, x≠0
19) Solve for x: $\frac{x-1}{x-2} + \frac{x-3}{x-4} = 3\frac{1}{3}$, where x≠2,4
20) A train travels a distance of 480km at a uniform speed. If the speed had been 8km/h less, then it would have taken 3 hours more to cover the same distance. We need to find the speed of the train.
21) From the top of a 7m high building, the angles of elevation of the top of a cable tower is $60°$ and the angle of depression of its foot is $30°$. Determine the height of the tower.
22) The angle of elevation of an aeroplane from a point A on the ground is $60°$. After a flight of 30 seconds, the angle of elevation changes to $30°$. If the plane is flying at the height of $3600\sqrt{3}$ m , find the speed of the plane in km/hr .

&&&&&&&&&&&&&&&&&&&&&&&&