14) If A (3, y) is equidistant from points P (8, - 3) and Q (7, 6). Find the value of Y and find the distance AQ.

15) Find a relation between x and y such that the point (x, y) is equidistant from the points (3, 6) and (− 3, 4).

16) Find the co-ordinates of the point which divides the line segment joining the points (6, 3) and (−4, 5) is the ratio 3 : 2 internally.

17) Find the points of trisection of the line segment joining the points
(i) (3, −2) and (− 3, −4)  (ii) (2, −2) and (−7, 4).

18) If the point C (− 1, 2) divides internally the line segment joining A (2, 5) and B in ratio 3 : 4, find the co-ordinates of B.

19) Find the ratio in which the point (− 3, P) divides the line segment joining the points (−5, −4) and (−2, 3). Hence find the value of P.

20) The co-ordinates of one end point of a diameter of a circle are (4, −1) and the co-ordinates of the centre of the circle are (1, −3). Find the co-ordinates of the other end of the diameter.

## REAL NUMBERS

## WEEK-1

1) Find the largest number that divides 1251, 9377 and 15628 leaving remainders 1, 2 and 3 respectively.

2) Find the largest number that will divide 398, 436 and 542 leaving remainders 7, 11 and 15 respectively.

3) If the HCF of 408 and 1032 is expressible in the form of 1032 x 2 + 408 x P, then find the value of P.

4) Three bells toll at intervels of 9, 12, 15 minutes respectively. If they start tolling together, after what time will they next toll together ?

5) Two tankers contain 850 litre and 680 litre of petrol. Find the maximum capacity of a container which can measure the petrol of each tanker in exact number of times.

6) The length, breadth and height of a room are 8 m 50 cm, 6m 25 cm and 4m 75 cm respectively. Find the length of the longest rod that can measure the dimensions of the room exactly.

7) If two positive integers x and y are expressible in terms of primes x = $p^2q^3$ and y = $p^3q$. Find its LCM and HCF.

8) If HCF of 65 and 117 is expressible in the form of 65m−117, then find m.

9) The LCM of two numbers is 14 times their HCF the sum of LCM and HCF is 600. If one number is 280, then find the other.

10) Can two numbers have 15 as their HCF and 175 as their LCM ? Give reason.

## WEEK-2

11) Find the smallest number, when divided by 35, 56 and 91 leaves remainder of 7 in each case ?

12) Find the least number that is divisible by all numbers 1 to 10.

13) Show that the following are irrational

a) $2-\sqrt{3}$    b) $3+\sqrt{2}$    c) $4-5\sqrt{2}$    d) $\sqrt{5}+\sqrt{7}$

e) $\sqrt{5}$    f) $\sqrt{3}$    g) $\sqrt{5}+\sqrt{3}$

14) Check $4^n$ can end with the digit '0' for any natural number 'n'.

15) Explain why (17 x 5 x 11 x 3 x 2 + 2 x 11) is a composite number.

16) State Fundamental theorem of arithmetic.

17) Show that $8^n$ can't end with the digit 5 for any n€ I.

18) Why the number $21^n$ for any natural number n € N, can not end with 0, 2, 4, 6 and 8?

19) The LCM of two numbers is 2079 and their HCF is 27. If one of the number is 297. Find the other number.

20) An army contingent of 104 members is to march behind an army band of 96 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march **?**

21) The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds respectively. If they change simultaneously at 8a.m., at what time will they change together again ?

## CO-ORDINATE GEOMETRY

## WEEK-3

1) Find the distance between the points P (– 6, 7) and Q (3, 4).

2) Find the value of **x**, if the distance between the points (x, – 1) and (3, 2) is 5.

3) If the points A (4, 3) and B (x, 5) are on the circle with centre O (2, 3). Find the value of x.

4) Find a point on x-axis which is equidistant from (5, 9) and (–4, 6).

5) Which point on x – axis is equidistant from (5, 9) and (–4, 6).

6) Find a point on y – axis which is equidistant from A (6, 5) and B (–4, 3).

7) Which point on y – axis is equidistant from (2, 3) and (–4, 1).

8) The x-co-ordinate of a point P is twice its y – co-ordinate. If P is equidistant from Q (2, –5) and (–3, 6) then find the co-ordinates of P.

9) Show that the points (1, –1), (5, 2) and (9, 5) are collinear.

10) Show that four points (0, –1) (6, 7) (–2, 3) and (8, 3) are the vertices of a rectangle.

## WEEK-4

11) Find the co-ordinates of the centre of the circle passing through (5, –8), (2, –9) and (2, 1).

12) Find the centre of the circle passing through (6, –6) (3, –7) and (3, 3).

13) Find the value of 'k', if the point P (0, 2) is equidistant from (3, K) and (K, 5).