

### Mathematical operation :

Addition : determination of sign : 1) If both sign are plus then the result will be in plus sign. For eg.

$$4+5=+9$$

2 ) if both sign are in minus then the sign will be minus and the number should be added.

for eg:  $-4-6 = -10$

3 ) if one sign minus and other plus then use sign that is before the greater number and smaller number should be subtracted from greater number. i.e :  $-7+3=-4$  ,  $-5+8=3$

### **4. multiplication :**

a.  $(+) \times (+) = +$

b.  $(+) \times (-) = -$

c.  $(-) \times (-) = +$

**Simplify : use BODMAS Rule**

### Unitary method and time and work

Two variable x and y are in

- a. direct proportion : if x increase then y also increase ,if x decrease then y also decrease.
- b. indirect proportion : if x increase then y decrease,if x decrease then y increase.

- 1) 35 men can make 70 toys in 8 days by working 8 hours a day. How many days will 56 men need to make 84 toys by working 12 hours every day?
- 2) A ,B and C together can finish the work in 15 days. A takes twice as much time as B and C together, B takes thrice as much time as A and C together takes. In how many days A,B and C alone can finish the same work?
- 3) Pipe A and B can fill a tank in 3 minutes and 5 minutes respectively and C can empty the same tank in  $15/2$  minutes .when the tank is empty , all the pipes are opened at once.in how many minutes the tank will be filled ?
- 4) X,Y and Z can do a piece of work in 45,60 and 90 days respectively.they started the work together ,X left after 15 days and Y left 5 days before the completion of the work.Z finishes the remaining work,how many days Z worked altogether ?
- 5) A contractor undertook to finish the work in 20 days.He employed 40 men to do the work.After 16 days ,it was found that two third of the work was completed.how many extra men should be employed so that the work should be finished in time?
- 6) Ram takes twice as much time as Shyam and thrice as much time as Hari to complete a piece of work . if they work together they can finish the same work in 4 days .find the number of days that shyam takes to finish the work alone ?
- 7) Raj can build a house alone in 16 days but Suraj alone can build it in 12 days. Raj and Suraj work on alternate days. If Raj works on first day, the house will be built in how many days?

- 8) If 12 men or 16 women can do a work in 172 days, how long will 21 men and 15 women to do the same work?
- 9) If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days what is time taken by 15 men and 20 boys?