1. When 6 boys were admitted and 6 girls left the percentage of boys increased from 60% t0 75%. Find the original number of boys and girls in the class.

Solution:- Let the number of boys be x,

Girls be y

Total = x + y

x/(x+y)=60/100……………..(1)

(x+6)/(x+6)(x-6)=75/100

On solving we get:-

x = 24 and y = 16

1. When the son will be as old as the father today their ages will add up to 126 years.When the father was old as the son is today, their ages add upto 38 years. Find their present ages. Solution:- Let the son’s present age be x

Father’s age be y

Difference in age (y - x)

Of this difference is added to the present age of son, then son will be as old as the father now and that time, the father’s age will be [y + (y -x)]

[x + (y - x)] + [y(y -x)] = 128

[y + (x - y)] + [x + (x - y)] = 38

One solving we get x = 12 and y = 50

Hence the age of son is 12 years

And the age of father is 50 years.

1. A cyclist , after riding a certain distance , stopped for half an hour to repair his bicycle , after which he completes the whole journey of 30 km at half speed in 5 hours. If the breakdown had occurred 10km farther off, he would have done the whole journey in 4 hours. Find where the breakdown occurred and his original speed.

Solution:- Let x be the place where breakdown occurred y be the original speed .

x/y +(30-x)/(x/2)=5

(x+10)/y + (30-(x+10))/(y/2)=4

x/y + (60-2x)/y =5

On solving we get x=10km

and y=10km/hr

10. The population of the village is 5000. If in a year, the number of males were to increase by 5% and that of a female by 3% annually, the population would grow to 5202 at the end of the year. Find the number of males and females in the village.

Solution:- Let the number of males be x and females be y

x + y =5000

x+(5/100)x + y+(3/100)y = 5202…….(1)

5x+3y=20200………..(2)

On solving 1 and 2 we get :- x = 2600

and y = 2400

Number of males = 2600

Number of female = 2400

AB is a dimeter of a circle and AC is its chord such that ˪BCA - 30̊.If the tangent at C intersects AB extendwd at D,then BC = BD.

Solution:

True

To Prove ,BC=BD