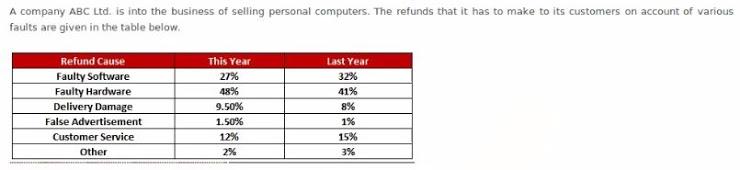
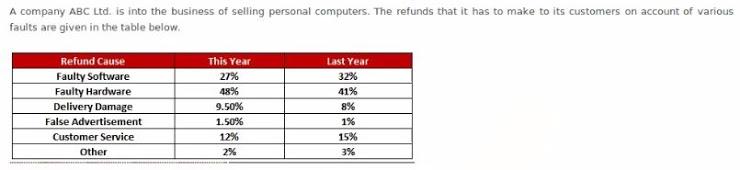
1. If total refunds last year totalled 912 and this year saw a 20% increase in the number of refunds, then approximately how many refunds were issued this year due to delivery damage?



* 1. 102
  2. 124
  3. 104-----ans
  4. 1040

1. If refunds totalled 912 last year and 615 this year,then by how much did faulty hardware refunds decrease?



* 1. 28%
  2. 79%
  3. 21.05%---ans
  4. 93%

Directions: Of the six men of literature A, B C. D. E and F being considered here, two belonged to the 17th century, three to the 19th and one to the 20th century. Four were recognised as great poets, three as great novelists and three as great dramatists. One contributed to Bengali literature, two to Hindi, two to Marathi and one to Tamil. The 20th century writer wrote poetry only and contributed to Marathi literature and the other Marathi writer contributed to poetry, novel and drama. One Hindi writer and the only Tamil writer belonged to the 19th century. The former contributed to poetry and novel while the latter to novel and drama. The Bengali writer belonged to the 17th century and contributed to poetry only. A belonged to the 20th century. B wrote drama only, C contributed to Marathi literature, D was a Hindi poet and novelist and belonged to the 19th century. E also belonged to the 19th century, and F contributed to poetry only.

1. Among these, who was the Tamil writer ?
   1. A. A
   2. B. B
   3. C. E
   4. D. F

Ans: E

1. To which language did B contribute
   1. A. Bengali
   2. B. Hindi---ANS
   3. C. Marathi
   4. D. Tamil
2. Three persons P, Q, R can do a piece of work. Any two of them can do the work in 5 days. Then in how many days P alone can do the work.?

Ans: 10days.

1. A means + ,B means -, C means \*, D means /, E means (\_)2, F means square root..0

E(7 A 7 D 7)A F(50 B 50 D 50)B(9 A 8 D 8)--61

1. In how many ways can the letters of the word MOBILE. So that vowels always together.?-----(4!\*3!)= 144
2. Cones heights are in the ratio 2:1 & radius’s are 1:4. What will be the volume’s ratio .?----1:8
3. A, B moving towards each other at speeds of 40kmph & 50 kmph.If they met after 40 min then what is the initial distance ,between A & B.-----60km
4. m+m-1=⅕ then what is the value 25m2+25m-2 ?
5. In how many ways 2 boys & 1 girl can be selected from 20 boys & 10 girls?
6. If INDIA is coded as HLAEW, then CHINA is coded as ?
7. How Many 4 digits numbers can be formed less than 5000 with the digits of 0,1,2,3,4,5,6.(if repetition not allowed)
8. The speed of A and B are in the ratio 3:5. A takes 15 minutes to reach a certain destination. How much time B will take to cover the same distance ?
9. Ram’s age was square of a number last year and it will be cube of a number next year. How long must he wait before his age is again the cube of a number?

[Ages Model-06]

* 1. 39 years
  2. 38 years
  3. 10 years
  4. 64 years
  5. None of these

Ans:b

Exp:By a little guess work we can easily determine that the present age is 26 as next year it will be 27 which is the cube of 3. One year ago it was 25 ,

which is square of 5. Next cube will be at 64 so he has to wait for 38 years. Hence option B is the answer

Directions: Study the following data carefully and answer the question that follows.

A%B = (A+B)2

A#B = (A2-B2)

A?B = (A-B)^2

1. Question: Find the value of 5?(6%2)

A. -3481 B. 59 C. 3481 D. -59

Directions: Functions model-01

f(a,b) = a2+b2-(a/b)

g(a,b) = (a/b)

1. Find the value of expression {f(a,b)-g(a,b)} where a=2 and b= -2 ?

Directions: Following functions are given Functions model-01

f(a,b) = a5+b5-(a/b)

g(a,b) = (a/b)

1. Find the value of expression {f(a,b)-g(a,b)} where a=2 and b= -2 ?

Directions: Functions model-01

f(a,b) = a3+b3-(a/b)

g(a,b) = (a/b)

1. Find the value of expression {f(a,b)-g(a,b)} where a=2 and b= -2 ?
2. The cost of 13 kg of sugar is Rs 195 while the cost of 17 kg of rice is Rs 544 and the cost of 21 kg of wheat is Rs 336. Find the total cost of 21 kg of sugar, 26 kg of rice and 19 kg of wheat? [Algebra Model-4]
   1. Rs. 1451
   2. Rs. 1306
   3. Rs. 1500
   4. Rs. 1636

Ans:a

Exp:Cost of 13 kg of sugar = Rs 195

Cost of 21 kg of sugar= Rs 315

Cost of 17 kg of rice = Rs544

Cost of 26 kg of rice = Rs 832

Cost of 21 kg of wheat = Rs 336

Cost of 19 kg of wheat = Rs 304

Required cost = 315+ 832+ 304 =Rs 1451

1. A rectangular grassy plot is 112m by 78m.It has a gravel path 2.5m wide all around it on the inside. Find the cost of constructing it at Rs. 2 per m2.
   1. Rs. 2,300
   2. Rs. 1,567
   3. Rs. 1,850
   4. Rs. 2,355

Ans:c;

Exp:Area of the path = (112\*78) – (73 \* 107) = 925m2

Cost= 925 \*2 = 1850

1. If a = 16, b=25, the value of 1/(a^-1/2 - b^-1/2) is:

Option 1 : 10 Option 2 : 15 Option 3 : 20 Option 4 : 25 Option 5 : 30

1. 3 designers x,y and z can stitch 324 dresses in 6 weeks working simultaneously. During one shift, z stitches as many dresses more than y as y stitches more than x. Z’s work in 10 weeks in equivalent to x’s work in 14 weeks. How many dresses does x stitch per shift.

a. 21 b 15 c. 27 d. 18

Ans:b

Exp:x+y+z=324/6=54

z-y=y- x then z+x=2y

10z=14x then 5z=7x

solving the equations we get x=15

**Directions:** Read the following information given below and the answer the following Questions Simplification Model-4

x?y =(x+y)/2

x&Y =(x^2-y^2)

x$y=(x-y)/2

1. Determine the value of (A&B)?C , when A=1,B=2,C=3

a)3 b)0 c)-2 d)-1

ans: B

1. Determine the value of (A&B)&C , when A=1,B=2,C=2

a)3 b)5 c)4 d)3

Ans : B

1. Determine the value of (A?B)&C , when A=-1,B=2,C=-1
   1. -0.75
   2. -0.25
   3. -4
   4. 0.25
2. Determine the value of (A$B)&C , when A=1,B=-1,C=2
   1. 1
   2. -3
   3. 2
   4. -1
3. 19,40,63,88,115,?,175,208
   1. 152
   2. 140
   3. 148
   4. 144

Ans: 144

1. 24,48,72,96,120,?,168,192
   1. 144
   2. 148
   3. 140
   4. 152
2. 20,42,66,92,120,?,182,216
   1. 150
   2. 146
   3. 158
   4. 154
3. 14,28,42,56,70,?,98,112
   1. 80
   2. 84
   3. 92
   4. 88
4. 9 boys can do a work in 8 days. How many boys are required to finish the sam e work in 12 days?
   1. 9 boys
   2. 6 boys
   3. 8 boys
   4. 12 boys
5. The ratio of present ages of Raju and sameer is 3 : 4. What is the age of Raju after 8 years, if the present age of sameer is 12 years ?
   1. 15
   2. 13
   3. 17
   4. 14
6. In how many ways 2 boys and 1 girl can be selected from a class of 10 boys and 20 girls?
   1. 900
   2. 500
   3. 700
   4. 450
7. In how many ways 12 apples can be distributed among 3 people?
   1. 21
   2. 91
   3. 53
   4. 82
8. A and B started towards each other simultaneously with velocities 40 kmph and 50 kmpoh respectively. If they meet each other after 40 minutes. What would be the distance between A & B when they started?
   1. 30 km
   2. 45 km
   3. 60 km
   4. 75 km
9. (a+(1/a))=6 then determine the value of (a3+a-3) =?
   1. 0
   2. 210
   3. 198
   4. None of these.
10. Sunny bought 10 kg of sugar at 12 per kg and another 12 kg of sugar at 8 per kg. He mixed the both types and sold the mixture for Rs. 11 per kg. What is his total profit?
    1. Rs.26
    2. Rs.19
    3. Rs.24
    4. Rs.17
11. What is the volume of a cylinder of radius 7 cm and height 12 cm?
    1. 1848 cm3
    2. 1876cm3
    3. 1815cm3
    4. 1903cm3
12. What is the simple interest on Rs.1500 at a rate of 5% per annum for 4 years?
    1. Rs.300
    2. Rs.288
    3. Rs.210
    4. Rs.255
13. In how many ways 14 apples can be distributed among 5 people?
14. Two pipes can separately fill a tank in 10 hours and 40 hours respectively. Both the pipes are opened together to fill the tank, but when the tank is half-filled a leakage develops, through which 1/2 of the water supplied by both the pipes leaks out. What is the total time taken to fill the tank ? Pipes & CIsterns model-3

A) 8 hours

B) 10 hours

C) 12 hours

D) 16 hours

E) 18 hours

1. In a certain code SAID is written #%35 and RED is written as @65. How is RAISE written in that code? Coding & Decoding Model-03

1) @%3#6 2) @6%#5 3) #%3@5 4) #%6@5 5) None of these

1. In how many ways can the 7 letters A,B,C,D,E,F and G be arranged so that C and E never together.

a. 5040 b. 6480 c. 3600 d. 1440 Permutations & Combinations Mode-03

Ans: 3600

C and E never together = Total arrangements – C and E together

Total arrangements are 7!

C and E together = pack c and e into one unit + 5 other alphabets = 6! 2! ( 2! Is two arrange c and e internally)

C and E never together = Total arrangements – C and E together = 7! – 6! 2! = 3600

1. 3 designers x,y and z can stitch 324 dresses in 6 weeks working simultaneously. During one shift, z stitches as many dresses more than y as y stitches more than x. Z’s work in 10 weeks in equivalent to x’s work in 14 weeks. How many dresses does x stitch per shift.

a. 21 b 15 c. 27 d. 18

Ans:b

Exp:x+y+z=324/6=54

z-y=y- x then z+x=2y

10z=14x then 5z=7x

solving the equations we get x=15

1. A square park is surrounded on the outside by a path 2 m wide. If the area of the path is 184 sq m, then what will be the area of the park ? Mensuration Model-04

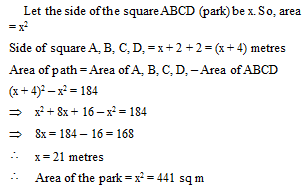
A) 400 sq m

B) 441 sq m

C) 484 sq m

D) 529 sq m

E) 576 sq m

Ans:

1. In how many ways can 34 people be divided into 17 couples? Permutations & Combinations Model-3
   1. (34!)/{(17!)17 (2!)}
   2. (34!)/{(2!)^17 \*(17!)}
   3. (34!)/ {(2!)(17!)}
   4. Data Inadequate

Ans:b

Direction: Read the info given below and answer the question that follow: Simplifications Model-04

(a$b)=(a+b)/2

(a&b)=(a2-b2)

(a?b)=(a-b)/2

1. What will be the value of((a$b)/(a&b))^2-(a$b)(a?b) at a =4 and b=6?
   1. 95/16
   2. 65/16
   3. 31/16
   4. 81/16

Ans: d

1. A person bought some apples at the rate of 5 per rupee. He bought the same number of apples at the rate of 4 per rupee. He mixes both the types and sells at 9 for 2 rupees. In this business, he bears a loss of Rs. 3. Find out how many apples he bought in all. Profit & Loss Model - 03
   1. 1050
   2. 1080
   3. 540
   4. 2160
   5. None of these

Ans:b;

Exp:Suppose he bought x apples of each quality.

At the rate of 5 apples per rupee, C.P of x apples = Rs.x/5

At the rate of 4 apples per rupee, C.P of x apples = Rs.x/4

Thus, Totyal Investment = x/5 + x/4 = 9x/20

No.of apples sold =2x

At the rate of 9 apples per 2 rupees, S.P of each apple = Rs.2/9

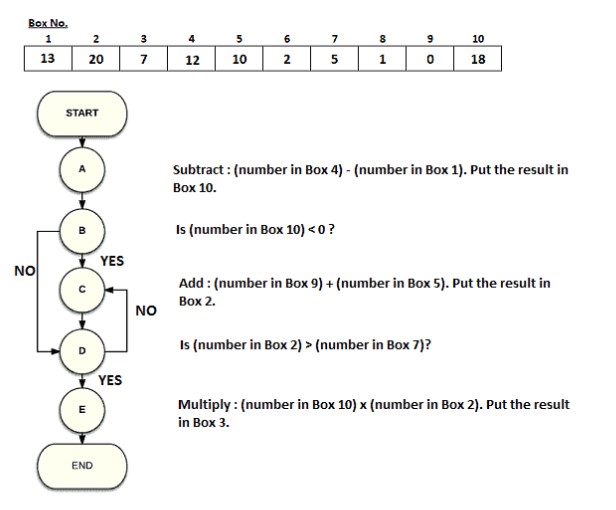
S.P of 2x apples =2x\*2/9 =4x/9

Loss =9x/20 - 4x/9 = (81x-80x)/180 = x/180 =3

Then x =540

total Apples = 2x=2\*540=1080

Directions: Study the flow chart give below and the questions that follow Flowchart



1. Question: At the end of the flow chart the number placed in which of the following boxes will remain unchanged

A. Box 3

B. Box 10

C. Box 2

D. Box 7

Ans:d;

Explanation :

In instruction 1, Box 10 is modified;

In instruciton 3, Box 2 is modified;

and in instruction 5, Box 3 gets mofied;

Therefore out of given options only Box 7 remains unchanged.

1. Is the following statement True or False

Statement:

If the condition in Step C updates the value in Box 3 instead of Box 2, then the flow chart will enter into infinite loop

A. TRUE

B. FALSE

C. Cannot be determined

Ans:b;

Explanation:

even if Box 3 is updated instead of Box 2 in instruction C,

In instruction D, Number in Box 2 is compared with Box 7,

and the value is anyway greater, so the result is YES there and thus exiting and finishing the loop.

1. Three pipes can fill the tank in 18 hours. One of the pipes can fill it in 18 hrs and the other pipe can empty in 9 hours. At what rate does the third pipe work?
2. Waste pipe emptying the tank in 18 hours
3. Filling the tank in 9 hours
4. Filling the tank in 18 hours
5. Waste pipe emptying the tank in 9 hours

Ans:b;

Exp:

1/18 = 1/18 – 1/9 +x

X=1/9

Filling the tank in 9 hours

1. if m/(m2-2m+1)=1/5, then determine the value of (m3 + m-3) Algebra model-02
2. 323
3. 321
4. 320
5. 322

Ans:d;

Exp: (m2-2m+1)/m=5

Apply denominator to individual terms

m-2+1/m=5

m+1/m=7

so (m+1/m)3 = m3+3m+3/m+1/m3

substitute required values in above equation.

Ans: 322

1. A cone of height 21cm has a volume of 2200 cm3.Determine the base radius of the cone.

A. 2.5 cm B. 10 cm C. 7.5 cm D. 5 cm

1/3 \* Pi \* r2 \* h = 2200

r=10

1. A survey shows that 63% Britishers like cheese, whereas 76% Britishers like apples. If x % of the Britishers like both cheese and apples, then find the value of x. [Percentages model-03]
   1. 40<= x<= 60
   2. 35<= x<= 65
   3. 39<= x <= 63
   4. None of these

Ans:c

EXP:

Draw a Venn diagram, where Cheese and apples intersect.

You should have three areas in this diagram with an area of intersection.

Maximum would be when people who like cheese also like apple, which means = 63 %

Minimum would be = 63+76 -100 = 39

Hence, the answer will be 39 <=x =<63

1. If a× b = 2a-3b+ab, then 3 × 5 +5 x 3 is equal to: [Algebra Model-01]
   1. 20
   2. 23
   3. 24
   4. 22

Ans:d;

1. If p ×q = p × q + p/q , the value of 8 ×2 are:
   1. 13
   2. 14
   3. 15
   4. 16

Ans:b

### To do certain work B would take three times as long as A and C together and C takes twice as long as A and B together A, B and C together complete the work in 10 days .How long would A alone take to complete the work?

### A man travels from his house to his office at 5 km/hr and reaches his office 20 min late .if his speed had been 7.5 km/hr ,he would have reached his office 12 min early .find the distance from his house to his office.

1. 17,37,59,83,109,?,167,199
2. 5,13,25,?,61,85
3. 7,6,13,36,??,216,25
4. 8,18,32,?,72,98,128
5. 1892,2162,2450,2756,3080,?,3782
6. 576,210,339,81,452,40,565, ?,
7. 15,34,72,148,300,?,1212,2428
8. Of the six men of literature A, B C. D. E and F being considered here, two belonged to the 17th century, three to the 19th and one to the 20th century. Four were recognised as great poets, three as great novelists and three as great dramatists. One contributed to Bengali literature, two to Hindi, two to Marathi and one to Tamil. The 20th century writer wrote poetry only and contributed to Marathi literature and the other Marathi writer contributed to poetry, novel and drama. One Hindi writer and the only Tamil writer belonged to the 19th century. The former contributed to poetry and novel while the latter to novel and drama. The Bengali writer belonged to the 17th century and contributed to poetry only. A belonged to the 20th century. B wrote drama only, C contributed to Marathi literature, D was a Hindi poet and novelist and belonged to the 19th century. E also belonged to the 19th century, and F contributed to poetry only.
9. Among these, who was the Tamil writer ?
   1. A. A
   2. B. B
   3. C. E
   4. D. F

Ans:

1. To which language did B contribute
   1. A. Bengali
   2. B. Hindi
   3. C. Marathi
   4. D. Tamil

### If 10 men and 15 women can do a piece of work in 8 days and 9 men and 12 women can do it in 9 days, how many days will 5 men and 15 women take to do it?

1. Question:Two packets are available for sale.

packet a: peanuts 100 gms for Rs 48 only

packet b: peanuts 150 gms for Rs 72 only

which is a better buy?

a. both have the same value b. packet b c. data insufficient d. packet a

Ans: a. both have the same value

1. To earn extra profit,a shopkeeper mixes 30 kg of dal purchased at Rs.36/kg and 26 kg of dal purchased at Rs.20/kg.What will be the profit that he will make if he sells the mixture at Rs.30/kg?

A. Rs.60 B. Rs.80 C. Rs.50 D. Rs.100

1. How many ways 11 identical objects distributed among 4 persons.
2. X^2-8x-1=0 then find x^3+1/x^3
3. 6,15,26,?,58
4. If a tank has capacity of 100 gallons A diameter D leakage is found so it leaks 5 gallons/minute as minute by minute D increases by “Dt” In how many minutes tank will empty.

Ans: 3 ⅜ min

1. In certain code language SWIMMER is coded as CPHHLXB then FRIENDS can be coded as\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 40 men can do a piece of work in 15 days, after how many days 15 men should leave so that the work can be completed in 20 days.
3. Arcs of two different circles with angles 45 and 90 degrees are equal,then find the ratio of their radius ?
4. Cut : Bleed :: Wound :?
5. x:y = 1:4, determine the value of (x+3y):(3x+4y).
   1. 5:13
   2. 10:15
   3. 13:19
   4. 13:17
6. Rs.6000 is lent at a simple interest of 12.5% per annum. What is the time taken to earn an interest of Rs.3000.?
   1. 4 years
   2. 9 years
   3. 8 years
   4. 6 years

Ans: a;

1. If in a certain code language “ADOPT” is coded as “FJKVY”, then how would “EVERY” be coded in that language?
2. What will be the volume of a cone of height 66 cm and base radius 2.1 cm?
   1. 30.5 cm3
   2. 35.5 cm3
   3. 213.45 cm3
   4. 91.5 cm3
3. A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the printed price and the cost price of the book is:

A. 56:45

B. 45:51

C. 47:56

D. 47:51

Ans: a;

1. If in two circles arcs of the same length subtend angles 60 and 75 at the centre find the ratio of their radius ?

Ans: 5 : 4

Exp:

Arc length = 2\*pi\*r(angle/360)

Arc lengths are same so

r1\*60 = r2 \* 75

r1/r2 = 5 / 4

r1:r2 = 5:4

1. If in two circles arcs of the same length subtend angles 30 and 45 at the centre.What will be the ratio of areas of the two circles ?

Arc length = 2\*pi\*r(angle/360)

Arc lengths are same so

r1\*30 = r2 \* 45

r1/r2 = 45/30 = 3/2

A1/A2 = 9 / 4

A1 : A2 = 9 : 4

1. Three friends X,Y and Z can do a work in 24 days. X is as efficient as Y and Z together and Y takes double the time as X to complete the work. How many days X alone can complete the work?

A. 48 days

B. 44 days

C. 52 days

D. 36 days

Ans: a;

Exp:

X = y+z

Y = 2z

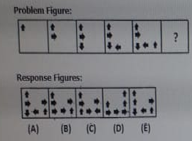
Let us assume z = 1 u/d

Y = 2 u/d

X = 3 u/d

So X+Y+Z = 24\* 6 = 144 U

X = 144 / 3 = 48 days

1. Find the missing figure.
2. 
3. Serena can stitch a shirt in 6 hours. After half the shirt is stitched, three more friends of Serena, who have the same efficiency as that of her, start working on the shirt. What is the total time they will take to stitch the shirt?
4. The population of a town was 8000. In one year, the female population increased by 8% and the male population increased by 10%, but the total increased by 9%. What is the number of males in the town now?
5. Read the information given below and answer the question that follow

xSy = (x/y)/2

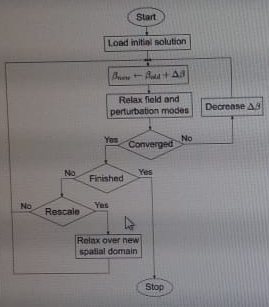
xTy = x/y

xJy = (x-y)/3

xWy = 1

Find the value of (2S3)W(4T2)

1. Flow chart:



When are the solutions relaxed over new spacial domain?

1. When solutions are not converged.
2. After rescaling is done.
3. When beta is decreased.
4. When beta is increased.

What min number of steps that needs to be taken for the successful completion of flowchart?

[ note don’t take “start” and “end” as steps]

9. The avg of 5 consecutive integers starting with X as the first integer is Y. What would be the

avg of 9 consecutive integers starting with (X + 2)?

10. The ratio of two numbers is 5:9 and the difference between the two numbers is 40.What is

the sum of the numbers?

11. Which least number must be subtracted from 4743 so that the remainder when divided by

8,12,14 will leave in each case the same remainder 27?

Ans: 12

12. There are 2 identical red, 2 identical green and 2 identical black pens. In how many ways

can the pens be placed in 4 boxes(each box is to contain one pen) arranged in a sequence

such that pens of the same colour do not occupy any two consecutive boxes?

13. Sam bought 10 cows for Rs.50000 each. 1 cow died and he said 2 cows at 5% loss. What

must be the selling price of the remaining cows to earn an overall profit of 10% ?

14. **Statement:**

Cases of deaths due to dengue are increasing in rural areas.

**Assumptions:**

1. Percentage of mosquitoes are more in rural areas.
2. Medical facilities are not readily available to the rural population.

15. Adam and Jennifer have a number of sweets with them in the ratio 3:5. If each of them eats

9 of their respectives sweets, then the new ratio of sweets with them is 12 : 23.The number

Of sweets with Adam, initially, was:

16. Two trains 123 meters and 127 meters in length are running towards each other on parallel

Lines, one at a rate 22 kmph and another at 28 kmph. In what time will they be clear of each

Other from the moment they meet?

17. A cheetah runs at a speed of 180 kmph. It covers a distance of 400m in?

18. David is the grandson of William. Following details are known about their ages:

-- David’s age two years from now will be one third of his grandfather’s present age.

--the ratio between David’s age five years hence and William's age five years ago is 2:3

Determine David’s age seven years hence.

19. In the university examination, Lisa scored 85% in science and 70% in maths. What is the

min percentage she should score in english if he aims at getting 65% overall?

(it is known that science and maths are for 150 marks each and english for 200 marks)

20. Determine the sum of first 23 terms of the following AP:

-13, -8, -3,.......

21. **Statement:**

1. Some authors are teachers.
2. No teacher is a lady.

**Assumptions:**

a)some teachers are not ladies.

b) some ladies are teachers.

22. **Question:**

Is quadrilateral ABCD a parallelogram?

**Statements:**

1. Adjacent sides AB and BC have the same length.
2. Adjacent sides CD and AD have the same length.

23. **Question:**

Today price of an item is Rs.3600, then what was the price of the item exactly 2 years ago?

**Statements:**

1. The price is increased by 10% per year during these 2 year period.
2. today , the price is 121 times the price exactly two years.

24. Diagram:



If the number of students at IIT BOMBAY for different courses is: Mechanical-130 and

Electrical-240,then what is the avg salary offered at IIT BOMBAY graduate?

25. If the number of students in Mechanical is increased by 140( from the base of 130) and

The number of electrical students is 240, then what would be the avg salary offered at IIT

BOMBAY graduate?