05.09.2020 AN SESSION

1. 

Shobhit buys 300 litres milk @ 19 / litre.

Cost of Water is Rs 10 / litre

CP of 300 l of milk is Rs 5 700 🡪 1

CP of 200 l of water is Rs 2 000 🡪 2

Add 1 and 2

Cp of 500 l of mixture 7 700

Of a total of 500 l = 400 l + 100 l

Sells 400 litres @ 20 / litre.

SP of 400 l = 400 \* 20 = Rs 8 000

Remaining 100 l he adds 10 l of water and sells @ 15 / litre

SP of 110 l = 110 \* 15 = 1650

SP of 510 l = 9650

CP of 500 l+ CP of 10 l of water = 7 700 + 100 = 7 800

If he adds 200 litres of water , it will become 500 litres

200 l water @ 10 / litre.

CP is 5700 + 2000 = 7 700.

He has 500 litres @ 7 700 CP.

He has 510 litres @ 7 800 CP

Selling 400 litres @ 20 / litre =

SP of 400 litres = 400 \* 20 = 8000.

Remaining 100 l + 10 l = 110 l is what he has

Selling 110 litres @ 15 / litre

SP of 110 litres = 110 \* 15 = 1650.

CP of 510 = 7800

SP of 510 = 9650

Profit = SP – CP = 9650 – 7800 = 1850

2. An air conditioner can cool the hall in 40 minutes while another takes 45 minutes to cool under similar conditions. If both air conditioners are switched on at same instance, How long will it take to coot the room approximately ?

AC -A 40 mins to cool the room

AC- B = 45 mins to cool the room

LCM (40,45) =360units = Tot work

AC A Eff = 9 units / min

AC B EFF = 8 units / min

AC A+B Eff = (9 + 8 ) units / min

= 17 units / min

Time (A + B) = 360 / 17 = 21 3/17 mins approx. 22 mins

3. 

Marked Price of T shirt is Rs 2400.

Buy 1 and get1 free

Price of 2 shirts is Rs 2400

Price of 1 shirt is Rs 1200. He is getting Profit % = 33.33%

SP of 10 pencils =100

CP of 10 pencils = 80 P% = 20%

SP of 1 pencil = 10

CP of 1 pencil = 8 P % = 20 %

SP of 1 shirt = 1200 P % = 33.33%

CP of 1 shirt. = x

CP = SP \* (100 / ((100 + P%))

CP \* (133.33 / 100) = SP

CP \* 4 / 3 = 1200

CP = 1200 \* 3 / 4 = 900

4. 

CP of 12 clips = Rs.60

SP of x clips = Rs 60; Profit of 20 %

CP of 12 clips = SP of x clips

((BQ – SQ )/ SQ )\* 100 = Profit or Loss %

((12 – x) / x) \* 100 = 20 %

1200 – 100x = 20x

1200 = 120x

10 = x

5. 

8-1\* x =(-4)-1

(1 / 8) \* x = - (1/4)

x = - (8 / 4)=-2

6. (10101)2 = Decimal Number

64 32 16 8 4 2 1

1 0 1 0 1

1 + 4 + 16 = 21

7. The no of 5 digit odd numbers.

1,2,3,4,5

\_4ways\_\_ x \_3 ways\_\_ x \_2ways\_\_ x \_1 way\_\_ x \_3 ways\_\_

=72 ways or 72 (5 digit odd numbers.)

8. 1,2,3,4,5,6,7

How many 4 digit numbers can be formed.

\_7ways\_\_ x \_6 ways\_\_\_ x \_5 ways\_\_\_ x \_4 ways\_\_\_ = 840 without repetition

\_7ways\_\_ x \_7 ways\_\_\_ x \_7 ways\_\_\_ x \_7 ways\_\_\_ = 2401 with repetition

9. If the sum of 4 times a number A and three times a number B is equal to the sum of number B and seven times the number A, then what is the value of A:B?

4A + 3B = B + 7A

3B – B = 7A – 4A

2B = 3A

2 / 3 = A / B

10. 1 4 9 16 25 36 49 64 81 100

121 144 169 196 225 256 289 324 361 400

441 484 529 576 625 676 729 784 841 900

A perfect aquare cannot end in 2,3,7,8

3-1=2

4-1=3

8-1=7

9-1=8

11. The number of 6-digit even numbers that can be made from the number 214635 are:

1 ,2, 3, 4 ,5, 6

6 digit even numbers .

**Repetition is not allowed**

5 ways(1,) x 4 ways (5) x 3 ways(6) x 2 ways x 1 way x 3 ways (2) =120 \* 3 = 360

**Repetition is allowed**

6 ways x 6 ways x 6 ways x 6 ways x 6 ways x 3 ways = 65 \* 3

12. One third of a two digit number exceeds its one fourth by 7. What is the sum of digits of the number?

(1 / 3) \* x – (1 / 4 ) \*x= 7

4x – 3x = 7 \* 12

x = 84.

Sum of digits 8 + 4 =12.

ROUGH CALCULATION

133.33333…….. / 100 = 4 / 3

83.33 / 100 = 5 / 6

100 / 3 = 33.3333333333………

STUDENT DOUBT

SUCCESS

In how many ways can we permutate the word SUCCESS such that the vowels are not together.

No of words were vowels are not together = Total – No of words were vowels are together.

Total No of words that can be formed from SUCCESS = 7! / 2! \* 3!

No of words where the vowels are together = (S)(C)(C)(S)(S)(UE )= (6! / 3! \* 2!) \* 2 !

No of words were vowels are not together = 7! / 2! \* 3! - (6! / 3! \* 2!) \* 2 !