SECTION II

Q6 A primary school had an enrollment of 850 pupil in Jan 2022, the enrollment in Jan 2023, was 1120. What was the increase percentage enrollment.

A primary school had enrollment of 850 pupil in Jan 2022.

In Jan 2023, the total enrollment was 1120 pupil.

So what was the percentage increase for the enrollment?

First find the difference of enrollment pupil in two years.

= 1120 - 850 = 270 pupil

Now find the percentage of 270;

$$\frac{270}{120}$$

____ % increase in enrollment.

Dos and Don'ts for General Science & Ability Paper

Hi there, you've done well. Know that acquiring knowledge is one thing and reproducing it in paper according to what's asked is another. There are a few things I would like to highlight.

1. A 5 marks part requires at least 2 and at max 3 sides of a paper. Know that there can be two or three parts of a question and their marks are divided accordingly. So, address all of them in a just manner.

2. Focus on time management. You get 35 minutes to solve one question and about 8 minutes per 5 mark part. Manage your time accordingly!

3. You need to understand that your paper is supposed to look more scientific than theoretical. So add flowcharts and diagrams where required.

4. Your handwriting and neatness can be really impactful. Avoid cutting and overwriting.

5. Focus on your spellings and your grammar. Here, in GSA there's no deduction in marks but your expression will definitely create an impact.

6. In ability portion, give explanation for analysis ability question in words. You need to understand that a 5 mark part requires all steps well explained.

Good luck for CSS 2023. You're gonna rock in sha Allah. :)

(6) A man is 5 times as old as his son, two years ago the sum of squares of their ages was 114, find the present age of his son?

Ans: Let the age of son = x

A man is 5 times as old as his son = $5x$

Two years ago the sum of squares of their ages was 114 i-e

$$(x-2)^2 + (5x-2)^2 = 114 \quad \to ①$$

∵ Use formula here

$~~~(a)^2 + (b)^2 = (a+b) \quad a^2 + b^2 = 2ab$

Now expand each square

$(x-2)^2 = x^2 + 4 - 4x$
$(5x-2)^2 = 25x^2 + 4 - 20x$

Now add the expressions

$x^2 + 25x^2 - 4x - 20x + 4 + 4 = 114$

$~~~26x^2 - 24x + 8 = 114$
$~~~~~~ \text{i-e} ~~ 26x^2 - 24x + 8 - 114 = 0$

Simplify the equation, so divide it by 2 on Bosides

1) A man has some hens and cows if the no of heads be 48 and no of feet is equal to 140, find the no of hens.

Each head will have at least two legs = 48×2
$= 96$ legs

Remaining $140 - 96 = 44$

Total no of heads $= x + y = 48$ ——①

Total no of feet $= 2x + 4y = 140$ ——②

Solve the equations

$x + y = 48$ (x with 2)

$2x + 2y = 96$ —— ③

$\pm 2x \pm 4y = \pm 140$ ——②

$\mp 2y = \mp 44$

$y = \dfrac{44}{2} = 22$ cows

put $y = 22$ in eq ①

$x + y = 48$

$x + 22 = 48$

$x = 48 - 22 = 26$ so $\boxed{x = 26}$ hens

d) A car b runs at a speeds of 40 km/h during first half of the journey and at the speed of 60 km/h the 2nd half of journey. What is the average speed of a car?

Ans. $x = $ A car runs at a speeds of 40 km/h during first half of the journey

$y = $ and 60 km/h at the 2nd half of journey.

What is the average speed of a car?

Formula of average =

$$\frac{x+y}{2}$$

$$= \frac{40+60}{2} = \frac{100}{2}$$

Average = 50 km/h speed of car

$$13x^2 - 12x - 53 = 0$$

Solve the quaradatic eq

u'g the quadratic formula

$$x = \frac{-(b) \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-(-12) \pm \sqrt{(-12)^2 - 4(13)(-53)}}{2(13)}$$

$$= \frac{12 \pm \sqrt{144 + 2756}}{26}$$

$$= \frac{12 \pm \sqrt{2900}}{26} = \frac{12 \pm 53.85}{26}$$

1. $\frac{65.85}{26} \approx 2.53$

2. $-\frac{41.85}{26} \approx -1.60$ (age is never negative)

So the present age of the

Son is ≈ 2.53 Ans

Q7 A number is divided by 6 and 50 is added. If the total number is 60, what is that number.

Ans Lets represent the unknown

$$no = x$$

The problem states:

① The number is divided by 6

$$= x/6$$

② Then 50 is added $= \dfrac{x}{6} + 50$

③ the result is 60 $\Rightarrow \dfrac{x}{6} + 50 = 60$

Now Subtract 60 from B-Sides

$$\dfrac{x}{6} = 60 - 50 = 10$$

$$\dfrac{x}{6} = 10$$

or $\boxed{x = 60}$

So the number is

$$60 \; Ans$$

b Find the odd one outs

8, 16, 24, 34, 40, 48.

Ans
8, 16, 24, 34, 40, 48.

The odd one in above
is 34 because 34 is
not divisible by 8 or not
multiple of 8, 0
and all other number
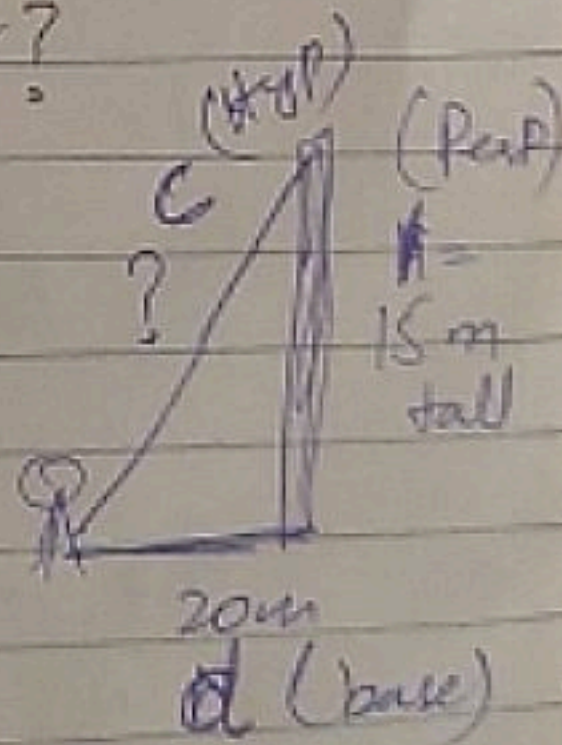are divisible by 8.

B all others all the
multiples of 8.

© A tower is 15m tall. If I am
standing 20m from the base
of the tower. What is my
aerial distance from the
top of the tower?

Ans   Height of tower
= 15m
Distance of 20m
from the base
To find hypotenus
use pythagoras theorem
$$C^2 = b^2 + d^2 = A$$

or $d = \sqrt{h^2 + d^2}$

$c = \sqrt{(15)^2 + (20)^2}$

$= \sqrt{225 + 400}$

$= \sqrt{625} = 25\,m$

Ans

⑨ In a hotel, the tariff for every odd dates is Rs 1000 and for even dates is Rs 2000. If the man paid total of 30000 in all. For how many days did he stay in the hotel (given that the first day is 5th date of the month)

Ans Tarif for every odd dates is Rs 1000

" " " even dates is Rs 2000

If the man paid total of 30000 in all And the first day is 5th date of the month

Odd days are 5, 7, 9, 11, 13, 15
17, 19, 21, 23

= Total 10,000 RS
1000×10

Even days are 6, 8, 10, 12, 14,
16, 18, 20, 22, 24

= Total 20,000 Rs
2000×10 =

So 10,000 + 20,000

= 30,000 Rs

So The total days he
spent in hotel was

20 days.

Q8 =

(a) Faisal mosque in Islamabad constructed by a Turkish architect with worship hall of a certain geometrical shape. Write the formula for the area of specific shape used as an outer view of worship halls.

Ans The main prayer hall of Faisal Mosque is shaped like an eight sided shell with a triangular structure when viewed from outside. The geometric shape that dominates the outer view is a series of equilateral triangles.

The formula for the area of an equilateral triangles is:

$$Area = \frac{\sqrt{3}}{4} \times a^2$$

where "a" is the length of a side of the equilateral triangle.

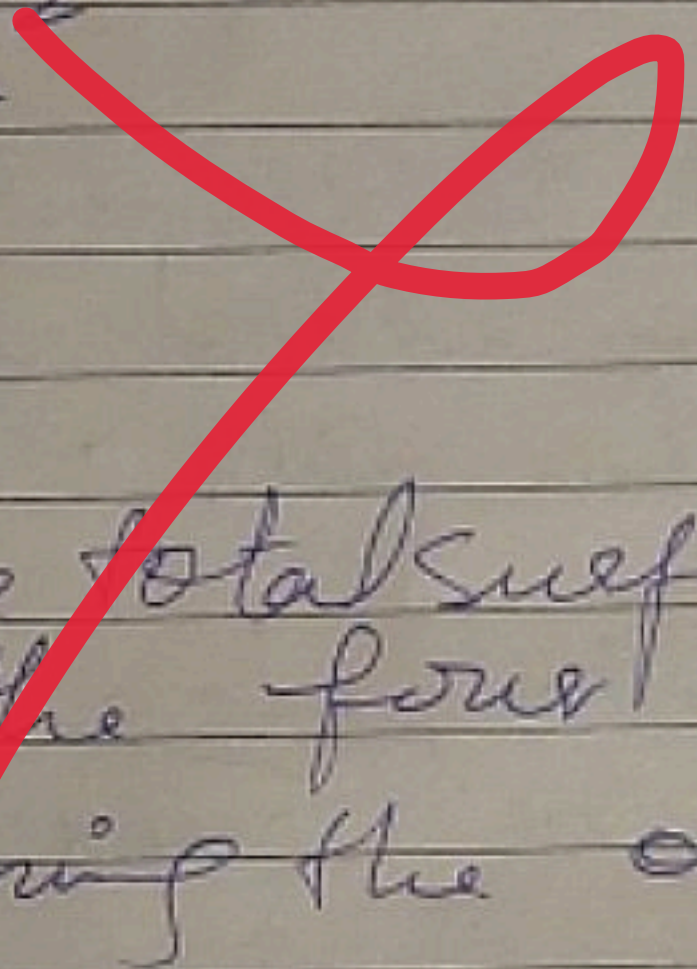It is the Area of one Triangular shell.

Total Surface Area (for four Triangular faces) are;

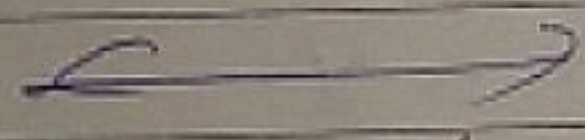If all four shells are congruent equilateral triangles:

Total Surface Area

$$= 4 \left(\frac{\sqrt{3}}{4} \times a^2 \right)$$

Total surface area $= \sqrt{3} \times a^2$

This gives the total surface area of the four triangular shells forming the outer structure.

$\longleftarrow \longrightarrow$

8 In a mixture of 60 liters, the ratio of milk and water is 2:1. If the ratio is to be 1:2, then what is the quantity of water to be further added.

Sol.

Quantity of milk $= \left(60 \times \dfrac{20}{3} \text{ liters}\right)$

$= 40$ liters

Quantity of water in it $= (60-40)$ l

$= 20$ liters

New ratio $= 1:2$

Let the quantity of water to be added further be x liters. Then milk : water $= \left(\dfrac{40}{20+x}\right)$

Now, $\left(\dfrac{40}{20+x}\right) = \dfrac{1}{2}$

$\Rightarrow$ $20 + x = 80$

$\Rightarrow$ $80 - 20 = x$

$\boxed{x = 60}$

$\therefore$ Quantity of water to be added $= 60$ liters.

⊙ If A is the brother of B
and B is the sister of C,
C is the father of D.
How, D is related to A, D
being a male member.

Ans

A $\xrightarrow{\text{Brother of}}$ B
(male)   (female)

B $\xrightarrow{\text{sister of}}$ C
Female   (male)

C $\xrightarrow{\text{father of}}$ D
(male)   (male)

So the Relation of D with
A is that the D is
the Nephew of A.

Q In a certain code ROAR is written as URDU. How URDU, its will be written in that code?

Ans As ROAR → URDU

R → U
O → R
A → D
R → U

Now

A B C D E F G H I J
K L M N O P Q R S T
A B C D E F G H I J
K L M N
O P Q R S T U V W X Y Z

URDU

U → X
R → U
D → G
U → X

So XUGX is Ans