

Quantitative Aptitude

Solution1:

(A) Solve through options. Let us take option A.

$$\text{GM of 4 and 1} = \sqrt{4} = 2$$

$$\text{AM of 4 and 1} = \frac{4+1}{2} = 2.5$$

Now, 2 is 20 % less than 2.5 , so this gives the answer.

Solution2:

Unconventional Method:

In one year he saves $100 \times 12 = 1200$

Now for 11 months he saves $11 \times 50 = 550$

Similarly for 10 months $10 \times 50 = 500$

Similarly, he saves for remaining months as follows:

$$9 \times 50 = 450$$

$$8 \times 50 = 400$$

$$7 \times 50 = 350$$

$$6 \times 50 = 300$$

$$5 \times 50 = 250$$

$$4 \times 50 = 200$$

$$3 \times 50 = 150$$

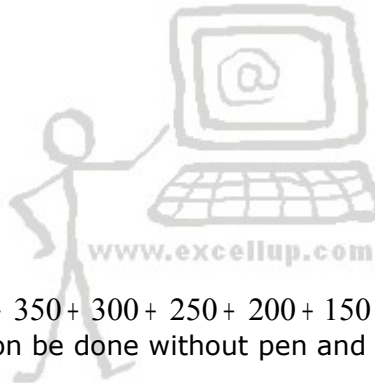
$$2 \times 50 = 100$$

$$1 \times 50 = 50$$

Total Saving =

$$1200 + 550 + 500 + 450 + 400 + 350 + 300 + 250 + 200 + 150 + 100 + 50 = 4500$$

The method looks long but can be done without pen and paper.



Solution 3:

Solve through options

Let us take first option

$$60 \div 10 = 6 \text{ And } 60 \div 14 = 4.2$$

Let us take option 2

$$60 \div 15 = 4 \text{ And } 60 \div 19 = 3.1$$

Let us take option 3

$$60 \div 20 = 3 \text{ And } 60 \div 24 = 2.5$$

This fulfills the condition given in the question

Solution 4:

Solve through options
Let us take option 1

	Spirit	Solvent
Original Qty	50	50
Stolen Qty	40	40
Added Qty	16	64
New Qty	26	74

Let us Take Option 2

As $83.33\% = \frac{250}{3}$ so let us take 750 litres for ease of calculation

	Spirit	Solvent
Original Qty	375	375
Stolen Qty	312.5	312.5
Added Qty	125	500
New Qty	187.5	562.5

$187.5 + 562.5 = 750$

Now as 187.5 is 25% of 750 so it fulfills the condition given in the question

Solution 5:

Saving after household expense = $100 - 20 = 80$

Saving after books expense = $80 - 12 = 68$

Saving after clothes expense = $68 - 20.4 = 47.6$

No need to calculate further as even if 9520 would have been 50% the monthly income would be more than 18000

Only one option (C) is closer.

$20000 \times 47.6\% = 9520$

Solution 6:

Solve through options.

Let us take Option A.

Suppose she gets 12 chocolates for Rs. 2 at Scrooge's shop

Then as per question she will get 12 chocolates for Rs. 5 at market complex

Let us assume she gets 12 chocolates for Rs. 3 at Scrooge's shop

She will get 12 chocolates for Rs. 6 at market complex

In this situation she gets 6 chocolates for Rs. 1 at Scrooge's shop

And she gets 4 chocolates for Rs. 1 at market complex.

This fulfills all conditions in the question.

Solution 7:

Let us assume the rate = r

Then, $y = xr$

$z = yr$

$\Rightarrow r = \frac{z}{y}$ (1)

$$\Rightarrow z = yr = xr^2 \dots\dots\dots (2)$$

Putting value of r in equation (2) we get

$$y = x \times \frac{z}{y}$$

$$\Rightarrow y^2 = xz \text{ option (D)}$$

Solution 8:

$$12250 \propto 35^2$$

$$\Rightarrow 12250 = 1225 \times K, \text{ where K is the constant}$$

$$\Rightarrow K = 10$$

Price of broken pieces can be calculated as follows:

Smaller piece $10^2 \times 10 = 1000$

Bigger piece $25^2 \times 10 = 6250$

So, loss incurred = $12250 - (1000 + 6250) = 5000$ (D)

Solution 9:

A + B + C can do $\frac{1}{36}$ work in one day

As per question A and B can do $\frac{2}{3}$ and C can do $\frac{1}{3}$ of this one day's work

So, C will do $\frac{1}{36} \times \frac{1}{3} = \frac{1}{108}$ work in one day

So, C will take 108 days to finish the work (C)

Solution 10:

Relative Speed when ducks move in opposite direction

$$54 - 14 = 40 \text{ feet in 48 seconds}$$

So in 60 seconds $\frac{40}{48} \times 60 = 50 \dots\dots\dots(1)$

As they are meeting every 9 minutes when moving in opposite direction so

$$\text{Circumference} = 50 \times 9 = 450$$

Faster duck is overtaking slower duck every 54 minutes when moving in same direction

So, relative speed in same direction

$$= \frac{450}{54} = \frac{25}{3} \dots\dots\dots(2)$$

From equation (1) we get

$$S1 + S2 = 50 \dots\dots\dots(3)$$

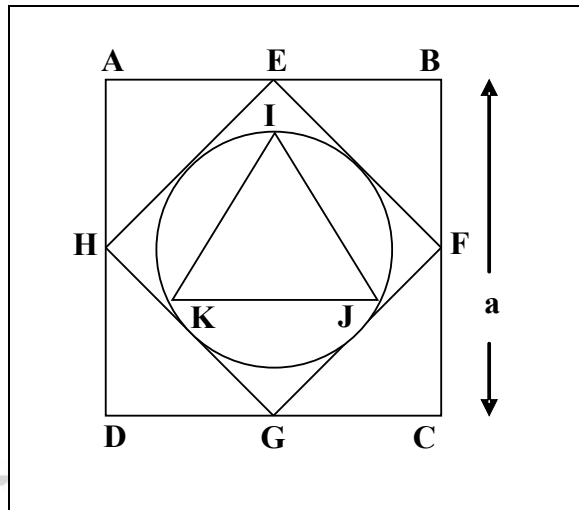
From equation (2) we get

$$S1 - S2 = \frac{25}{3} \dots\dots\dots(4)$$

Solving equations (3) and (4) we get

S2 = 20.83
S1 = 29.17

Solution 11:



In the given figure $CF = \frac{a}{2}$

Hence, $GF = \frac{a}{\sqrt{2}} = \text{Diameter of circle}$

Radius of circle = $\frac{a}{2\sqrt{2}}$

This will be circumradius of ΔIJK (equilateral triangle)

Circumradius = $\frac{\text{side}}{\sqrt{3}}$

$$\Rightarrow \frac{\text{side}}{\sqrt{3}} = \frac{a}{2\sqrt{2}}$$

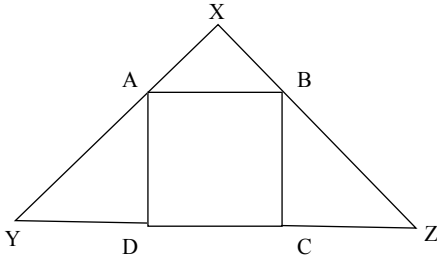
$$\Rightarrow \text{side} = \frac{\sqrt{3}a}{2\sqrt{2}}$$

$$\text{Area} = \frac{\sqrt{3}}{4} \times \text{side}^2 = \frac{\sqrt{3}}{4} \times \frac{3a^2}{8} = \frac{\sqrt{3}a^2}{32} \text{ option (D)}$$

Solution 12:

In the following figure $XY = XZ$

$AB = BC = CD = AD = 8$ cm because area is 64 sq cm



In $\triangle ADY$

$$\angle AYD = \angle YAD$$

$$\Rightarrow AD = YD = 8 \text{ cm}$$

Similarly,

$$BC = ZC = 8 \text{ cm}$$

In $\triangle XAB$

$$\angle XAB = \angle XBA = 45^\circ$$

$$\Rightarrow XA = XB = \frac{8}{\sqrt{2}}$$

Because diagonal $AB = 8$

Now,

$$\text{Area of Square} = 64$$

Area of $\triangle AYD$

$$= \frac{1}{2} \times 8 \times 8 = 32$$

Area of $\triangle XAB$

$$= \frac{1}{2} \times \frac{8}{\sqrt{2}} \times \frac{8}{\sqrt{2}} = 16$$

Similarly area of $\triangle BCZ = 32$

So, area of $\triangle XYZ$

$$= 64 + 32 + 32 + 16 = 128 = 144$$

Solution 13:

$$f(x) + g(x) = \frac{1}{g(x)} + g(x) = \frac{1 + g(x)^2}{g(x)}$$

Let us solve by putting minimum possible value for $g(x)$ which can be 1



Then equation can be written as $\frac{1+1}{1} = 2$ so, answer = (C)

Solution 14:

Let us solve thorough options

Option 1: If $x = 1$

Then equation can be written as

$$\frac{1-9}{3-1-24} = \frac{-8}{-22}$$

As it is a positive figure so this cant be solution

If $x = -2$

Then equation will be

$$\frac{4-9}{-6-4-24} = \frac{-5}{-34}$$

this is also positive doesn't fulfill the condition given in question

Option (B)

If $x = -4$

Then equation will be

$$\frac{16-9}{-12-16-24} = \frac{7}{-52}$$

this is a negative figure so fulfills the condition

If $x = 4$

Then equation will be

$$\frac{16-9}{12-16-24} = \frac{7}{-28}$$

this is also a negative figure so answer is (B)

15. (E)

16. (C)

17. (A)

18. (D)

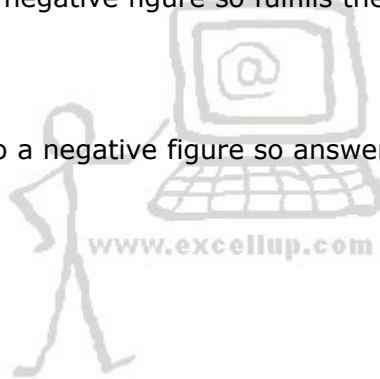
19. (B)

Solution 20:

Set A = {0, 2, 4} for different values of n

Set B = {3, 7, 11, 15, 19} for different values of n

$\Rightarrow A \cap B = \{\emptyset\}$



DATA INTERPRETATION

Question 1 to 4

	Jan	Feb	Mar	Apr	May
Jayant Chocolates	X x	Jayant C	X x	X x	X x
Kamal Icecream	x	X I	X x	X x	x
Namita Pastries	x	X x	P Namita	X x	x
Asha Dry Fruits	x	X x	X x	X x	D
Tanmay Bengali Sweets	X	X x	X x	Tanmay B	X x
	Bengali Sweets	Chocolates	Pastries	Bengali Sweets	Dry Furits

1. (B)
2. (D)
3. (A)
4. (E)

Questions 5 to 8

	1	2	3	4	5	6
Ms Roberts	N	N	N	N	N	Y
Mr. Brown	N	N	N	Y	N	N
Miss Hardy	n	n	n	n	Y	N
Mr. Donald	Y	N	N	N	N	N
Mr. Tim	N	Y	N	N	N	N
Mr. Mike	N	N	Y	N	N	N

5. (C)
6. (C)
7. (D)
8. (E)
9. (C) Divide area of the country by population

10. (D) This is a bit lengthy calculation, but accuracy gives you precious marks.
11. (B) Data for education expenditure is not available so options C and D can be easily eliminated
12. (E) There is no data for 1995
13. (D)
14. (E) Ms. Siudzak is not disagreeing with Janet's comments, rather she is firmly giving her own opinion, so this is the best option.
15. (D) The passage highlights the lacuna in the present system
16. (D) The mischievous person will always be on the lookout for loopholes.
17. (D) This is an attempt to learn, and will be an inside story which may never come in the public knowledge.
18. (B)
19. (E) The code can be deciphered as follows:
2 = from
8 = paper
5 = wall
9 = read
There is no clue for Tea
20. (B)

