

Day: Tuesday

Date: 4 Nov, 2025

NOA TEST SERIES

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NOA Batch: OB-001 - NTS 26

Subject: General science and abilities.

Question # 01

(a)

Find the missing term.

(a) 3, 9, 21, 39, 63, —

Sol:

Differences:

3, 9, 21, 39, 63, —

6, 12, 18, 24

So next difference = 30

$$63 + 30 = 93$$

Hence next missing number is 93

(b) 1, 5, 11, 21, 37, —

Sol:

The pattern is obtained by adding
4, 6, 10, 16 (adding 2, 4, 6 each time)

Next difference : 22

$$\text{So, } 37 + 22 = 59$$

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However;

The differences are: $+4, +6, +10, +16$

The differences of differences: $+2, +4, +6$

if pattern continues, the next difference of differences is $+24$

So, $37 + 24 = 61$

(c) $5, 16, 29, 46, 65, 88, \underline{\hspace{2cm}}$

Sol:

Difference: $11, 13, 17, 19, 23$.

These are successive prime numbers.

Next prime = $29 \rightarrow 88 + 29 = 117$

Answer: 117 .

(d) $1, 3, 4, 9, 27, 36, 243, \underline{\hspace{2cm}}, 972$.

Sol:-

This sequence, alternate between powers of 3 and their multiples.

$1, 3, 4 (1 \cdot 3 + 1), 9 (3^2), 27 (3^3), 36 (4 \cdot 9), 243 (3^5)$

Given the numbers, let's look at

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it as alternating between powers of 3 and another sequence:

Powers of 3: 1, 3, 9, 27, 243, 729 (3^6)
and 972

So, sequence might be:

1 (3^0), 3 (3^1), 4 ($1+3+1$), 9 (3^2), 27 (3^3), 36 (4×9), 243 (3^5), 324 (36×9),
972 (4×243)

Given this pattern, the missing term would be: 324

(B) In a code language KENWOOD is written as RRGWICL, then in same language the word Panasonic is written as?

Sol:-

$$K \rightarrow R = +7$$

$$O \rightarrow C = -12$$

$$E \rightarrow R = +13$$

$$D \rightarrow L = +8$$

$$N \rightarrow G = -7$$

$$W \rightarrow W = 0$$

$$O \rightarrow I = -6$$

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Those 7 shifts form a repeating pattern. Apply that to PANASONIC.

$P(+7) \rightarrow W$

$A(+13) \rightarrow N$

$N(-7) \rightarrow G$

$A(0) \rightarrow A$

$S(-6) \rightarrow M$

$O(-12) \rightarrow C$

$N(+8) \rightarrow V$

$I(+7) \rightarrow P$

$C(+13) \rightarrow P$

So, in the same code language
PANASONIC becomes WNGAMCVPP.

(C) A, B, C, D and E are sitting
..... which position A is sitting?

Sol:

A is sitting next to B

C is sitting next to D

D is not sitting with E, who is on
the left end.

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C is on the second position from right.

A is to the right of B and E

A and C are sitting together.

So;

E is on left end (pos 1). C is second from right. C sits next to D and D cannot sit by E, so D must be pos. 5. A and C sit together, so A must be pos 3 (adjacent to C). A is next to B and is to the right of B and E, so B must be pos 2.

Final order: left $\rightarrow$ right: E, B, A, C, D.

So, A is sitting in the middle.

D- A's son B is married

..... related to A?

Sol:-

A's son = B

B is married to C $\rightarrow$ so (C = B's wife)

C's sister = D

D is married to E who is B's brother.

so E is also A's son.

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Since D is married to A's son F

Answer:

D is A's daughter-in-law.

Question # 02

(A) Father is aged -----
----- would be of Rashid's age?

Sol:-

Let's denote Rashid's current age as R and Father's current age as F.

Given:-

$$F = R + 3R = 4R$$

After 8 years:

$$F + 8 = 2.5(R + 8)$$

$$4R + 8 = 2.5R + 20$$

$$4R - 2.5R = 20 - 8$$

$$1.5R = 12$$

$$R = 8$$

$$\text{So, } F = 4R = (4)(8) = 32$$

After further 8 years (16 yrs total) :

$$\begin{aligned}\text{Rashid's age} &= R + 16 \\ &= 8 + 16 \\ &= 24\end{aligned}$$

$$\begin{aligned}\text{Father's age} &= F + 16 \\ &= 32 + 16 \\ &= 48\end{aligned}$$

Now,

$$\begin{aligned}\text{Father's age} / \text{Rashid's age} &= \frac{48}{24} \\ &= 2\end{aligned}$$

After further 8 years, the father would be 2 times Rashid's age.

(B) Saleem walks 20km - - - - -
- - - - - initial position.

Sol:-

let's breakdown the question:-

20 km North.

40 km west (since he turned left)

20 km South.

20 km east (since he turned left again)

Distance calculation:

$$\begin{aligned}\text{North-South movement} &= 20\text{km} - 20\text{km South} \\ &= 0\text{km}\end{aligned}$$

he ends up at same latitude.

$$\begin{aligned}\text{East-west movement} &= 40\text{km} - 20\text{km} \\ &= 20\text{km West.}\end{aligned}$$

(i) How far is he from starting point?

So, Saleem is 20km west of his starting point.

(ii) How much path he had travelled?

$$\begin{aligned}\text{Total distance traveled} &= 20 + 20 + 20 + 40 \\ &= 100\text{km.}\end{aligned}$$

(iii) In which direction is he moving?

Saleem is moving East.

(iv) His initial position?

Saleem is 20km west of his initial position.

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(C) A bus starts - - - - -
- - - - - entered the
bus ?

Sol:-

Let's denote the number of men
as M and number of women as
 W

Given:

$$W = 0.5M$$

$$M = 2W$$

In city Y:

$M - 10 = W + 5$ (since 10 men leave and
5 women enter, making number of
men and women equal)

$$2W - 10 = W + 5$$

$$2W - W = 5 + 10$$

$$W = 15$$

$$M = 2W$$

$$= 2(15)$$

$$= 30$$

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Initially, total number of passengers

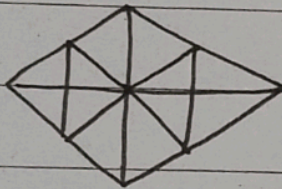
$$= M + W$$

$$= 30 + 15$$

$$= 45$$

So, 45 passengers entered the bus in beginning.

(D) Find total number of triangles in the following figure:



Sol:-

Let's count triangles in figure:

Smallest Triangles:- There are 8 small triangles

Triangles made of 2 small triangles:

There are 4 such triangles by combining adjacent triangles.

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Triangles made of 4 small Triangles:

There are 4 such triangles (larger triangles formed by combining smaller one).

Total number of triangles:

$$= 8(\text{smallest}) + 4(\text{made of 2 small triangles}) + 4(\text{made of 4 small triangles}) = 16$$

Answer = 16.

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