Logical Reasoning

- Syntax:
  - [Positions] ... [Change]

Number Series

Type 1

- Syntax:
  - [Positions] ... [Change]

> Example

1. 544 509 474 439:
   - 1,2,3 ... -45
2. 14,28,20,40,32,64:
   - 1,2,3 ... $*2$
3. 80,10,70,15,60:
   - 1,3,5 ... -10
   - 2,4,6 ... $+5$
4. 8,6,9,23,87:
   - 1,2,3 ... $m=1 >> n*m-(m+1)=(n+1) >> m=m+1$

> $8*1-2=6, 6*2-3=9, 9*3-4=23$

Type 2

1. 21 25 18 29 33 18:

- 1,4,7,... $+8$
- 2,5,8 ... $+8$
- 3,6,9 ... $=18$

Type 3

1. 42 40 38 35 33 31 28:
   - 1,2,4,5 ... -2
   - 3,6,9 ... -3
2. 8 12 9 13 10 14 11:
   - 1,3,5 ... $+1$
   - 2,4,6 ... $+1$
3. 3 5 35 10 12 35 17:
   - 1,4,7 ... $+7$
   - 2,5,8 ... $+7$
   - 3,6,9 ... 35
4. 4 7 26 10 13 20 16:
   - 1,4,7 ... $+6$

    - 2,5,8 ... $+6$
    - 3,6,9 ... -6
5. 16 26 56 36 46 68 56:
    - 1,2,4,5 ... $+10$
    - 3,6,9 ... $+12$
6. 17 14 14 11 11 8 8:
    - 1,2 ... -3
    - 2,3 ... $=$
    - 3,4 ... -3

Type 4

1. 664, 332, 340, 170, _, 89:
    - 1,2 ... $/2$
    - 2,3 ... $+8$
    - 3,4 ... $/2$
2. 70, 71, 76, _, 81, 86, 70, 91:
    - 1,4,7 ... 70
    - 2,5,8 ... $+10$
    - 3,6,9 ... $+10$
3. 83, 73, 93, 63, _, 93, 43:
    - 1,4,7 ... -20
    - 2,5,8 ... -20
    - 3,6,9 ... 93

Type 4

1. 4, 7, 25, 10, _, 20, 16, 19:
    - 1,2 ... $+3$
    - 3,6 ... -5
    - 3,4 ... $+3$
2. 0.15, 0.3, _, 1.2, 2.4:
    - 1,2,3,4 ... $*2$

Letter & Symbol Series

Type 1

> Positions: In SCD, TEF, S: 1, C: 2, D: 3, T: 4, E: 5, F: 6

1. SCD, TEF, UGH, ___, WKL:
    - 1,4,7 ... $+1$
    - 2,5,8 ... $+2$
    - 3,6,9 ... $+2$
2. $B_2 CD$, ___, BCD_4, B_5CD, BC_6D:
    - 1,2,3 ... static

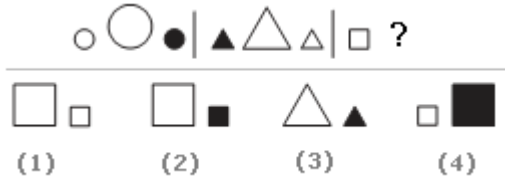
- Subscripts:
  - 1,5,9 ... $+1$
  - 10,14,18 ... $+1$

3. FAG, GAF, HAI, IAH:
   - 123,654: reverse
   - 1,7,13 ... $+2$
4. ZA_5, Y_4B, XC_6, W_3D:
   - 1,3,5,7 ... -1
   - 2,4,6,8 ... $+1$
   - Subscripts:
     - 2,6,10 ... $+1$
     - 3,7,11 ... -1

Type 2

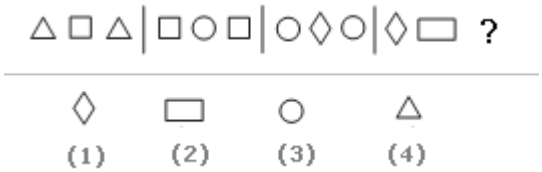
1. Image obtained from here

   - Directions:
     - L: Left
     - R: Right
     - U: Up
     - D: Down
   - RDR, DDD, RUR, UUU ... *pattern repeats*
2. Image obtained from here

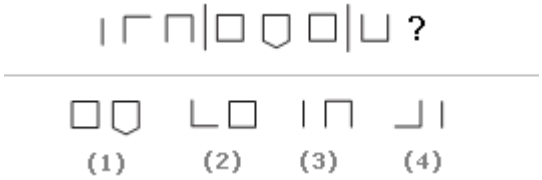


   - Filled or not:
     - F: Filled
     - U: Unfilled
   - Size:
     - s: small
     - B: big
   - suBUsf, sfBUsu, suBUsf, sfBUsu ... *pattern repeats*

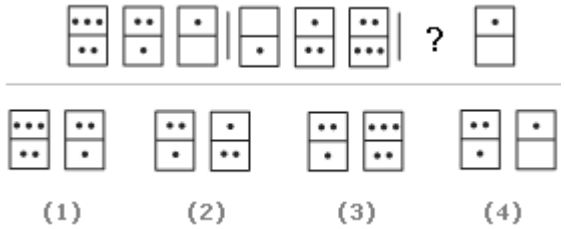
3. Image obtained from here



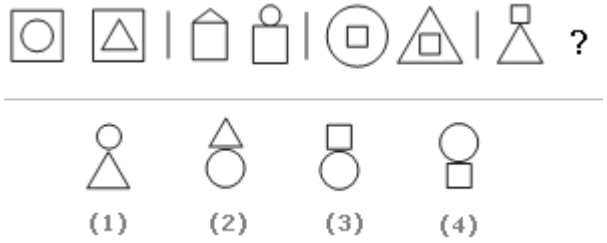
   - Shapes:
     - T: Triangle
     - S: Square
     - P: Parallelogram
   - TST, SCS, CPC, PSP ...
   - The shape in the middle (S in TST) moves to the edges (S in SCS) in the next iteration, and so on.
4. Image obtained from here



   - Sides: 1,2,3,4,5
   - 123,454,321 ... *pattern repeats*
5. Image obtained from here

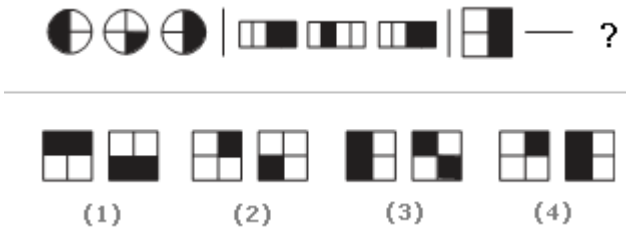


   - Number of dots: 1,2,3
   - Top Row: 321,123,321,123 ... *pattern repeats*
   - Bottom Row: 210,123,210,123 ... *pattern repeats*
6. Image obtained from here



   - Position:
     - i: inside another shape
     - o: outside another shape
   - Shapes:
     - C: circle
     - T: triangle
     - S: Square
   - CiS TiS, ToS CoS, SiC SiT, SoT SoC ... *pattern repeats*

7. Image obtained from here



   - Number of parts filled: 1,2
   - 212,212,212 ... *pattern repeats*

Artificial Language

Type 1

1. Here are some words translated from an artificial language. `gorblflur` means `fan belt` `pixngorbl` means `ceiling fan` `arthtusl` means `tile roof` Which word could mean "ceiling tile"?

- gorbl: fan
- pixn: ceiling
- arth: tile
- So, the word is `pixnarth`.

Type 2

1. Here are some words translated from an artificial language. `slar` means `jump` `slary` means `jumping` `slarend` means `jumped` Which word could mean "playing"?

- y: ing
- end: ed
- So the word is `clargy`.

Analogies

Type 1

1. yard is a larger measure than inch.
2. quart is a larger measure than ounce.
3. elated is the opposite of dependent.
4. enlightened is the opposite of ignorant.

Type 5

1. dalmation is a type of dog.
2. flinch is a type of bird.
3. spy acts in a cladestine way.
4. accountant acts in a meticulous way.
5. dirge is a song used in a funeral.
6. jingle is a song used in a commercial.
7. asinine means extremely silly.

8. ephemeral and immortal are antonyms.
9. feral and tame are antonyms.

Logical Games - Discussion

1. Five roommates Randy, Sally, Terry, Uma, and Vernon each do one housekeeping task mopping, sweeping, laundry, vacuuming, or dusting one day a week, Monday through Friday.
    - Vernon does not vacuum and does not do his task on Tuesday.
    - Sally does the dusting, and does not do it on Monday or Friday.
    - The mopping is done on Thursday.
    - Terry does his task, which is not vacuuming, on Wednesday.
    - The laundry is done on Friday, and not by Uma.
    - Randy does his task on Monday.
    - What task does Terry do on Wednesday?
    - Here, Terry does his task on Wesnesday. Sally does the **dusting**, **mopping** is done one Thursday, **laundry** is done on friday, and **Terry does not vacuum**. So, in the end, **only mopping** is left to be done by Terry.

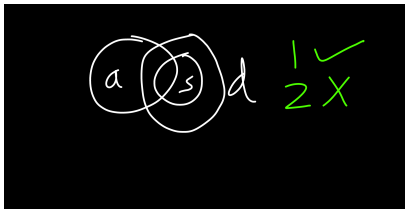
Verbal Reasoning

Syllogism

Type 1

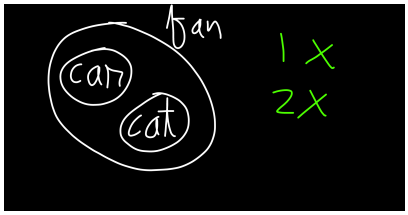
1. Some actors are singers. All the singers aredancers. Conclusion:

```
+ Some actors are dancers.
- No singer is actor.
```



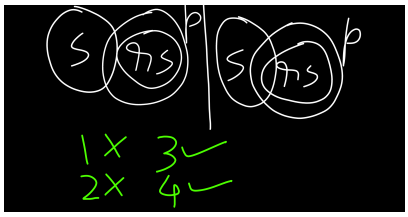
2. All cars are cats. All fans are cats. Conclusion:

```
- All cars are fans.
- Some fans are cars.
```



3. All the research scholars are psychologists. Some psychologists are scientists. Conclusion:

```
- All the research scholars are scientists.
- Some research scholars are scientists.
+ Some scientists are psychologists.
+ Some psychologists are research scholars.
```



Logical Sequence of Words

1. Newly married Couple, Family, Caste, Clan, Species
    - Relation: Belongs to
2. Si Units of measurement:
    - Exa (10^{18})
    - Peta (10^{15})
    - Tera (10^{12})
    - Giga (10^{9})
    - Mega (10^{6})
    - Kilo (10^{3})
    - Hecto (10^{2})
    - Deca (10^{1})
    - Unit (10^{0})
    - Deci (10^{-1})
    - Centi (10^{-2})
    - Milli (10^{-3})
    - Micro (10^{-6})
    - Nano (10^{-9})
    - Pico (10^{-12})

Analogy

1. Carbon:Diamond::Corundum:Ruby, is used in making
2. Eye:Myopia::Teeth:Pyorrhoea, can have disease
3. Cassock:Priest::Gown:Graduate, is worn by
4. CEDH:HDEC::????:PNRV, reverse order
5. DFHJ:LNPR::TVXZ:????, D -> L: +8, while D->F,F->H,H->J: +2. So, move forward 8 steps from T, then keep adding +2.

Arithmetic Reasoning

1. A girl counted in the following way on the fingers of her left hand : She started by calling the thumb 1, the index finger 2, middle finger 3, ring finger 4, little finger 5 and then reversed direction calling the

ring finger 6, middle finger 7 and so on. She counted upto 1994. She ended counting on which finger?
    - If we take the thumb, then the numbers are counted like: $1,9,17,25$, etc.
    - The equation is $8n+1$, n starts from 0.
    - So, $8n+1=1994$, $n=249(+1)$. So, she counts till 1 finger after the thumb, ie the index finger.
2. What is the product of all the numbers in the dial of a telephone?
    - The digit `0` is included among the dial, so the product is `0`.

Direction Sense

1. Golu started from his house towards North. After covering a distance of 8 km. he turned towards left and covered a distance of 6 km. What is the shortest distance now from his house?
    - The shortest distance is the hypotenuse of the triangle. $\sqrt {8^2+6^2}$
2. One evening before sunset Rekha and Hema were talking to each other face to face. If Hema's shadow was exactly to the right of Hema, which direction was Rekha facing?
    - If Hema's shadow was to the right of Hema, it means the sun was on the left of both of them.
    - Rekha was facing the South direction.
3. One morning Udai and Vishal were talking to each other face to face at a crossing. If Vishal's shadow was exactly to the left of Udai, which direction was Udai facing?
    - The sun is to the right of both of them. So this is the east direction.
    - If Vishal's shadow is to the left of Uday, it can only happen when Uday is facing the North and Vishal is facing the South.

Verbal Ability

Spotting Errors

1. One of the members expressed doubt **that** the Minister was an atheist.
2. According to the Bible, it is **the** meek and humble who shall inherit the Earth.
3. He persisted **in doing it** in spite of my advise.
4. The reason **why** Ram is absent from his duty is because he is unwell.
5. May I **please** know who you want to see?

Quantative Aptitude

Power Cycle: Used to calculate powers of big numbers, like 2369^{456}

- In 2369^{456}, 2369 is the base number, while 456 is the exponent (power).
- Unit digit in base number -> unit digit in result:
    - 0,1,5,6 -> 0,1,5,6
    - 4 -> 4 (4^1/odd exponent),6 (4^2/even exponent)
    - 9 -> 9 (9^1/odd exponent),1 (9^2/even exponent)
    - 2 -> 2 (2^1), 4 (2^2), 8 (2^3), 6 (2^4) and the cycle repeats for 5,6,7,8 ...
    - 3 -> 3 (3^1), 9 (3^2), 7 (3^3), 1 (3^4) and the cycle repeats for 5,6,7,8 ...
    - 7 -> 7 (7^1), 9 (7^2), 3 (7^3), 1 (7^4) and the cycle repeats for 5,6,7,8 ...
    - 8 -> 8 (8^1), 4 (8^2), 2 (8^3), 6 (8^4) and the cycle repeats for 5,6,7,8 ...
- Example: 2367^{456}:

    - The unit digit in the base number is 7.
    - $456%4=0$, which means the unit digit of the result will be 1.
- Example: 554^{26}:
    - The unit digit in the base number is 4.
    - 26 is even, which means the unit digit of the result will be 6.