



# VIDHIGYA

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# CLAT 2024 **RANBHOMI** *THE FINAL SPRINT*

— THE CLAT COMBAT —  
**THE MATHEMAGICIAN**



**QUANTITATIVE TECHNIQUES (DI)**

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**THE CLAT COMBAT**

**Quatitative Technique 1**

**Directions (1-5):** Read the following information carefully and answer the questions that follow.

There are six friends A, B, C, D, E and F who works in Vidhi Consultancy Services. The top brass of the organization decided to conduct a survey regarding the age of these six employees. The findings of the survey concluded that the person C is older than A and among A, B, C and D, D is the oldest one. Also, F is younger to D but older to E. The ratio of age of A, 'n' years ago to the age of B after '2n+1' years is 14:15. If B's present age is 'X' years and C is '3n+1' years older to B then, the difference in ages of A and C is 'n' years. A is 'X-10n' years younger to D. D's age '2n-1' years ago is equal to the present age of C. The average of age of A after '5n' years and C's present age is equal to D's age after 'n-1' years. E's age after 'X+3n-1' years will be equal to the sum of present ages of B and D. Use the findings of this survey to answer the questions below.

1. What is the present age of 'A'?  
(a) 25 years                      (b) 28 years                      (c) 30 years                      (d) 32 years
2. What will be the age of the person 'E' after '2n' years?  
(a) 30 years                      (b) 32 years                      (c) 34 years                      (d) 36 years
3. Which of the following could be a possible age of the person 'F'?  
(a) 28 years                      (b) 32 years                      (c) 36 years                      (d) 40 years
4. What will be the value of 'X + 2n - 5'?  
(a) 24                              (b) 25                              (c) 29                              (d) 30
5. What will be the sum of ages of A, B, C and D?  
(a) 115                              (b) 118                              (c) 120                              (d) 122

**1. Ans. c**

Sol. COMMON EXPLANATION

The ratio of age of A, 'n' years ago to the age of B after '2n+1' years is 14:15

Thus,

$$\frac{A - n}{B + 2n + 1} = \frac{14}{15} \dots \dots \dots (i)$$

C is '3n+1' years older to B

$$C - B = 3n + 1 \dots \dots \dots (ii)$$

The difference in ages of A and C is 'n' years

$$C - A = n \text{ so, } A = C - n \dots \dots \dots (iii)$$

D's age '2n-1' years ago is equal to the present age of C

$$D - (2n - 1) = C$$

$$D - 2n + 1 = C$$

$$D = C + 2n - 1 \dots \dots \dots (iv)$$

The average of age of A after '5n' years and C's present age is equal to D's age after 'n-1' years

$$\frac{A + 5n + C}{2} = D + n - 1$$

$$A + 5n + c = 2(D + n - 1)$$

Putting the value of A and D from the equations (iii) and (iv)

$$(C - n) + 5n + c = 2[(C + 2n - 1) + n - 1]$$

$$2c + 4n = 2(c + 3n - 2)$$

$$2c + 4n = 2c + 6n - 4$$

$$2n = 4$$

$$n = 2$$

Now, subtracting equation (iii) from equation (ii)

$$(C - B) - (C - A) = (3n + 1) - n$$

$$A - B = 2n + 1$$

$$A - B = 5$$

$$A = B + 5$$

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Putting  $A=B+5$  and  $n=2$  in equation (i)

$$\frac{B+5-n}{B+2n+1} = \frac{14}{15}$$

$$\frac{B+3}{B+5} = \frac{14}{15}$$

$$15B+45 = 14B+70$$

$$B = 25$$

Also, the age of B is X years, so  $X = 25$

$$A = B + 5, A = 30 \text{ years}$$

$$C = A + n, C = 32 \text{ years}$$

$$D = C + 2n - 1, D = 35 \text{ years}$$

Also, E's age after ' $X+3n-1$ ' years will be equal to the sum of present ages of B and D.

$$E + X + 3n - 1 = B + D$$

$$E + 25 + 6 - 1 = 25 + 35$$

$$E + 5 = 35, E = 30$$

Thus, the present age of A = 30 years

Hence, option (c) is correct.

### 2. Ans. c

Sol. Following the COMMON EXPLANATION

Present age of the person E = 30 years

As,  $n = 2$ , so  $2n = 4$  years

Thus, the age of E after  $2n$  years =  $30+4 = 34$  years

Hence, option (c) is correct.

### 3. Ans. b

Sol. Following the COMMON EXPLANATION

As, F is younger to D but older to E

Age of D = 35 years and age of E = 30 years

So, the age of F age will be between 30 and 35 years.

Hence, option (b) is correct.

### 4. Ans. a

Sol. Following the COMMON EXPLANATION

We have,  $X = 25$  and  $n=2$

So, ' $X + 2n - 5$ ' =  $25+4-5 = 24$ .

Hence, option (a) is correct.

### 5. Ans. d

Sol. Following the COMMON EXPLANATION

The sum of ages of A, B, C and D =  $30+25+32+35 = 122$  years

Hence, option (d) is correct.