Problem On Ages

Solution

1. **Answer: (C)**
Let Roni's present age = $4x + 4$
Let sonu's present age = $9x + 4$
$\therefore (9x + 4) - (4x + 4) = 20$
$x = 4$
$\therefore Tina's\ age = 20 + 10$
= 30 years

2. **Answer: (B)**
Let present age of A & B are x & y years respectively.
$\frac{x-4}{y-4} = \frac{5}{3}$
$3x - 12 = 5y - 20$
$3x = 5y - 8$ …….(i)
Let present age of C be z years
$x + y + z = 80$
$x + y = z$
$x + y = 40$ ……..(ii)
On solving (i) & (ii)
x = 24 years

3. **Answer: (C):**
The correct answer is Option 3 i.e. 16 years
Suppose Present age of A, B and C are a, b and c respectively.
4 years ago the sum of A's age and C's age was 32 years:
So,
(a + c) = 32 + 4 + 4
a + c = 40 ……..(1)
4 years hence the sum of ages of A and B will be 16 years more than the sum of the present ages of B and C.
So,
a + 4 + b + 4 = b + c + 16
a – c = 8 .....(2)
Solving the equation 1 and 2:
⇒ 2a = 48
⇒ a = 24
And c = 40 24 = 16
Hence, the present age of C = 16 years

4. **Answer: (C):**
Given:
Average age of 5 members 4 years ago = 21 years
Present average after a baby is born = 21 years
Formula used:
Sum of ages = Average × Number of family members
Calculation:
Total age of 5 members of family 4 years ago = 21 × 5 years
⇒ 105 years
Present age of 5 members would have been = (105 + 5 × 4) years
⇒ (105 + 20) years
⇒ 125 years
Now, present average of 6 members of family = (21 × 6) years
⇒ 126 years
Age of baby = (126 – 125) years
⇒ 1 year
∴ The age of baby is 1 year

5. **Answer: (C):**
Let the present age of X and Y are x and y respectively.
Sum of X and Y age 7 year ago is 86
⇒ (x – 7) + (y – 7) = 86
⇒ x + y = 100 – – – – – (i)
X age 20 year ago is equal to Y age 4 year ago.
x – 20 = y – 4
⇒ x – y = 16 – – – – – (ii)
Solving the equation (i) and (ii)
Present age of X = 58 years
Present age of Y = 42 years
Age of Y four year hence = 42 + 4 = 46 years

6. **Answer: (A):**
Let the present age of A be x
And the present age of B be y
According to the question,

x/(y – 4) = 7/8
8x = 7y – 28
8x – 7y = – 28 – – – – (i)
8 year hence
(x + 8)/(y + 8) = 9/11
11x + 88 = 9y + 72
11x – 9y = – 16 – – – – (ii)
On solving (i) and (ii)
We get y = 36 years
Let the present age of A and age of B 4 years ago be 7x and 8x respectively
Age of A after 8 years = 7x + 8
Present age of B = 8x + 4
Age of B after 8 years = 8x + 4 + 8
⇒ 8x + 12
Now, according to the question,
(7x + 8)/(8x + 12) = 9/11
⇒ 77x + 88 = 72x + 108
⇒ 5x = 20
⇒ x = 4
Present age of B = 8x + 4
⇒ 8 × 4 + 4 years
⇒ 32 + 4 years
⇒ 36 years
∴ The present age of B is 36 years

7. Answer: (C)

	A	B	C
$Present\ age$	a	$a+9$	$2a$

According to question
$$\frac{a+9+11}{2a}=\frac{9}{8}$$
$$\Rightarrow 8a+160=18a$$
$$\Rightarrow a=16$$
B's age after 4 yrs. $= a+9+4 = 29\ yrs$

8. Answer: (D)
Let, age of A be 'x' years.
Then age of B = 'x + 10' years
And age of C = 3x years
ATQ, $\frac{x+10+11}{3x}=\frac{3}{2}$
Or, $(x+21)2=9x$
Or, 7*x* + 42
⇒ *x* = 6
Age of C after 7 years = 3*x* + 7 = 18 + 7
= 25 years

9. Answer: (C)
B – A = 6 .. (i) $\begin{cases} Let\ A's\ age\ is \rightarrow A \\ Let\ B's\ age\ is \rightarrow B \\ Let\ C's\ age\ is \rightarrow C \end{cases}$
$$\frac{B+9}{C}=\frac{9}{8}$$
9C – 8B = 72 …(ii)
C = 2A …(iii)
(ii) & (iii)
⇒ 18A − 8B = 72
⇒ 18 (B – 6) − 8B = 72 [∵ A = B − 6 ... (i)]
10B = 180
B = 18 year
After 5 years B's age = 23 years

10. Answer: (D)
Present total age of husband and wife
$= 23 \times 2 + 2 \times 5 = 56$
Present total age of husband, wife and child
$= 3 \times 20 = 60$
Present age of child = 4 year

11. Answer: (D)
$\frac{f}{s}=\frac{5x}{2x}$ ……(i)
$\frac{s}{m+4}=\frac{2x+4}{m+4}=\frac{1}{2}$
$m + 4 = 4x + 9$
$m = 4x + 4$
$f : m = 5x : (4x + 4)$
Cannot be determined

12. Answer: (C)
At present,
Let the members be M, N, O and P
Where age of P > O > N > M
Since P died after 5 years at the age of 88.
So, present age of P = 88 - 5 = 83
Youngest member = M = 14 years
N + O + P = 54 × 3
N + O = 162 - 83 = 79 ....(i) (O>N)
10 years after the death of P means 15 years hence from present, Let Q be born
20 years from present means at that time Q = 5 years and is youngest
Eldest member at that time = O (age = O + 20)
(O + 20) - 5 = 57

O = 57 - 15 = 42 years
So, N = 79 - 42 = 37 years
After 5 years, members alive are = M, N, O
M = 14 + 5 = 19 years
N = 37 + 5 = 42 years
O = 42 + 5 = 47 years
Required ages are of N and O i.e. 42 and 47

13. Answer: (E)
Sum of present age of A, B, C and D
$= 19 \times 4 + 4 \times 4$
= 92 years
8 year hence their total age = 92 + 8 × 4
= 124 years
Sum of C and D present age
$= \left(124 \times \frac{17}{62} - 8\right) + \left(124 \times \frac{11}{62} - 8\right)$
= 26 + 14
= 40 years

14. Answer: (A)
Let present age of A be x yrs.
& present age of B be yrs.
ATQ,
x + y = 88 + 12
x + y = 100 …….(i)
$x - 18 = y - 6$
$x - y = 12$ …….(ii)
solving (i) & (ii)
x = 56
∴ age of A 2 years hence = 58 yrs.

15. Answer: (D)
Let the present age of A, B and C be x, y and z years respectively.
ATQ,
(x + 4) + (y + 4) = (y + z) + 16
$x - z = 8$……(i)
And $(x - 4) + (z - 4) = 32$
x + z = 40 ……..(ii)
From (i) and (ii)
z = 16 years

16. Answer: (A)
$A \rightarrow 2x\ years$
$B \rightarrow x\ years$
$(C - 18) = \frac{1}{2}(x + 6)$
$C = \frac{x}{2} + 21$
Given $\frac{(A + B + C)}{3} = 42$
$2x + x + \frac{x}{2} + 21 = 42 \times 3$
$\frac{4x + 2x + x}{2} = 105$
$x = 15 \times 2 = 30\ years$
Required age = 2x + 9 = 30 × 2 + 9 = 69 years

17. Answer: (A)
A + B = 41 ….(i)
$C - 1 = A + 2$
C = A + 3
And
$A + 4 = B - 1$
⇒ B = A + 5 ….(ii)
From (i) + (ii)
A = 18 years
B = 18 + 5 = 23 years
C = 18 + 3 = 21 years
$\frac{A}{D} = \frac{3}{4}D = \frac{4}{3} \times 18 = 24\ years$
∴Required difference = $24 - 21$ = 3 years

18. Answer: (D)
Let the present age of A be x years.
And that of B be y years.
ATQ,
$\frac{x + 4}{y + 6} = \frac{2}{1}$
⇒ x + 4 = 2y + 12
⇒ x – 2y = 8 …….(i)
C's present age = 2 (x + y) years.
$\frac{2(x + y) + 4}{y + 4} = \frac{23}{4}$
⇒ 8x + 8y + 16 = 23y + 92
⇒ 8x – 15y = 76 …….(ii)
From (i) and (ii)
Y = 12 years.

19. Answer: (B)
Let the present age of P be x years.
And that of Q be y years.
ATQ,
$\frac{x + 4}{y + 3} = \frac{3}{4}$
⇒ 4x + 16 = 3y + 9
⇒ 4x – 3y = – 7……(i)

R's present age = $\frac{5}{7}(x + y)years$

$\Rightarrow \frac{5}{7}(x + y) = 12 = y$

$\Rightarrow$ 5x – 2y = 84 …….(ii)

From (i) and (ii)

x = 38 years

y = 53 years

Required average = $\frac{38 + 53 + 65}{3} = 52years$

20. Answer: (E)

Let the current age of father and mother be 'x' years and 'y' years respectively.

Then son's present age = $(x - 28)yrs$

Then daughter present age = $(y - 26)yrs$

ATQ,

$(x + y + x - 28 + y - 26) = 130$

$(x + y) = 92$ ……(i)

Again after 3 years

$(x + 3 + y + 3 + x - 25) = 123$

$(2x + y) = 142$ ……(ii)

On solving the above equation we get y = 42 years.

Mother's present age = 42 years.