BIZOTIC
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APTITUDE MASTERY SERIES

MODULE 11 – AGES

1. The sum of ages of 5 children born at the intervals of 3 years each is 50 years. What is the age of the youngest child?

(a) 4 years (b) 8 years (c) 10 years (d) 12 years

Solution:

Let the ages of children be x, (x + 3), (<x + 6), (<x + 9) and (x + 12) years.

Then, x + (x + 3) + (x + 6) + (x + 9) + (x + 12) = 50

⇒ 5x = 20

⇒ x = 4.

∴ Age of the youngest child = x = 4 years.

2. The ages of three friends are in the ratio 11 : 5 : 13. What is the age of the youngest friend if the sum of their ages is 116 years?

(a) 21 years **(b) 20 years** (c) 19 years (d) 22 years

Solution:

Let the ages of three friends be 11*x*, 5*x* and 13*x*. The youngest of these is 5*x*. We have been given their sum. So (11 + 5 + 13)*x* = 116. Solving, we get *x*=4. The youngest is 5 x 4 = 20 years

3. Tony is 15 years elder than John. If 5 years ago, Tony was 3 times as old as John, then find Tony's present age.

(a) 32.5 years **(b) 27.5 years** (c) 25 years (d) 24.9 years

Solution:

1) Let age of John be y

2) Tony is 15 years elder than John = (y + 15). So Tony's age 5 years ago = (y + 15 – 5)

3) John's age before 5 years = (y – 5)

5 years ago, *Tony is 3 times as old as John*

(y + 15 – 5) = 3 (y – 5)

(y + 10) = (3y – 15)

2y = 25

y = 12.5

John's age = 12.5 years

Tony's age = (y + 15) = (12.5 + 15) = 27.5 years

4. One year ago, ratio of Loraine and Elizabeth age's was 5 : 6 respectively. After 4 years, this ratio becomes 6 : 7. How old is Elizabeth?

(a) 25 years (b) 26 years **(c) 31 years** (c) 35 years

Solution:

Hint: If ages in the numerical are mentioned in ratio A : B, then A : B will be Ax and Bx.

We are given that age ratio of Loraine : Elizabeth = 5 : 6

1) Loraine's age = 5x and Elizabeth's age = 6x

2) One year ago, their age was 5x and 6x. Hence at present, Loraine's age = 5x +1 and Elizabeth's age = 6x +1

3) After 4 years,

Loraine's age = (5x +1) + 4 = (5x + 5)

Elizabeth's age = (6x +1) + 4 = (6x + 5)

4) After 4 years, this ratio becomes 6 : 7. Therefore,

$$\frac{\text{Loraine's Age}}{6} = \frac{\text{Elizabeth's Age}}{7}$$

(5x + 5) / (6x + 5) = 6 / 7

7 (5x + 5) = 6 (6x + 5)

X = 5

Elizabeth's present age = (6x + 1) = (6 x 5 + 1) = 31 years

Loraine's present age = (5x + 1) = (5 x 5 + 1) = 26 years

5. Age of mother 10 years ago was 3 times the age of her son. After 10 years, mother's age will be twice that of his son. Find the ratio of their present ages.

(a) 11 : 7 (b) 9 : 5 (c) 7 : 4 **(d) 7 : 3**

Solution:

We are given that, age of mother 10 years ago was 3 times the age of her son

So, let age of son be x and as mother's age is 3 times the age of her son, let it be 3x, three years ago.

At present: Mother's age will be (3x + 10) and son's age will be (x + 10)

After 10 years: Mother's age will be (3x + 10) +10 and son's age will be (x + 10) + 10

Mother's age is twice that of son

(3x + 10) +10 = 2 [(x + 10) + 10]

(3x + 20) = 2[x + 20]

Solving the equation, we get x = 20

We are asked to find the present ratio.

(3x + 10) : (x + 10) = 70 : 30 = 7 : 3

6. Amit is 60 years old and Sharvesh is 80 years old. How many years ago was the ratio of their ages 4 : 6?

(a) 10 years (b) 15 years **(c) 20 years** (d) 25 years

Solution:

Here, we have to calculate: How many years ago the ratio of their ages was 4 : 6

Let us assume x years ago

At present: Amit is 60 years and Sharvesh is 80 years

x years ago: Amit's age = (60 – x) and Sharvesh's age = (80 – x)

Ratio of their ages x years ago was 4 : 6

$\frac{(60-x)}{(80-x)} = \frac{4}{6}$

6(60 – x) = 4(80 – x)

360 – 6x = 320 – 4x

x = 20

Therefore, 20 years ago, the ratio of their ages was 4 : 6

7. 5 years ago, sister's age was 5 times the age of her brother and the sum of present ages of sister and brother is 34 years. What will be the age of her brother after 6 years?

(a) 15 years (b) 13.5 years (c) 12 years (d) 20 years

Solution:

Let present age of brother be x and sister's age be 34 – x.

	Past Age (5 Yrs Ago)	**Present Age**	**Future Age (After 6 Yrs)**
Brother	(x – 5)	x	(x + 6) = ?
Sister	(34 – x) – 5	(30 – x)	

We are given, 5 years ago sister's age was 5 times the age of her brother.

Therefore,

(34 – x) – 5 = 5 (x – 5)

34 – x – 5 = 5x – 25

5x + x = 34 – 5 +25

6x = 54

x = 9

Future age (after 6 yrs) = (x + 6) = (9 + 6) = 15 years

8. Ages of two persons differ by 16 years. If 6 year ago, the elder one be 3 times as old the younger one, find their present age.

(a) 12, 28 **(b) 14, 30** (c) 16, 32 (d) 18, 34

Solution:

Let the age of younger person is x,

Then elder person age is (x+16)

=> 3(x-6) = (x+16-6) [6 years before]

=> 3x-18 = x+10

=> x = 14.

So other person age is x + 16 = 30

9. The product of the ages of Arjun and Nakul is 540. If twice the age of Arjun is more than Nakul's age by 6 years, then find Arjun's age?

(a) 18 years (b) 20 years (c) 16 years (d) 22 years

Solution:

Let the age of Arjun and Nakul be x and y respectively,

x * y = 540

2 * x = y + 6

x = (y + 6) /2

[(y + 6) /2] * y = 540

$y^2 + 6y = 1080$

$y^2 + 6y - 1080 = 0$

(y - 30) (y + 36) = 0

y = 30, -36 (-36 will be eliminated)

Arjun's age = 540/30 = 18 years

10. Priyanshi's present age is three times her son's present age and two fifth of her father's present age. The average present age of all of them is 46 years. What is the difference between Priyanshi's son's present age and Priyanshi's father's present age?

(a) 56 years (b) 64 years **(c) 78 years** (d) 72 years

Solution:

The ratio of present age of Priyanshi and her son's age = 3 : 1 (3x, x)

Priyanshi's present age = (2/5) * Priyanshi's father's present age

Priyanshi's father's present age = (15/2) x

According to the question,

x + 3x + (15/2) x = 138

(2x + 6x + 15x) /2 = 138

23x = 138 * 2

x = 12

Required Difference = 90 – 12 = 78 years

11. A is as much younger than B as he is older than C. If the sum of the ages of B and C is 50 years, what is definitely the difference between B and A's age?

(a) 1 year (b) 2 years (c) 25 years **(d) Data inadequate**

Solution:

1. The difference of age b/w B and A = The difference of age b/w A and C.

2. Sum of age of B and C is 50 i.e. (B + C) = 50.

Question: B - A = ?.

Explanation:

B - A = A - C

(B + C) = 2A

Now given that, (B + C) = 50

So, 50 = 2A and therefore A = 25.

Question is (B - A) = ?

Here we know the value (age) of A (25), but we don't know the age of B.

Therefore, (B-A) cannot be determined.

12. The age of mother one decade age was three times the age of her daughter. 10 years hence, mother's age will be two times that of her daughter. The proposition of their current ages is:

(a) 6:1 **(b) 7:3** (c) 8:6 (d) 10:5

Solution:

Let, Ages of mother and daughter 1 decade ago was 3A and A years correspondingly

Then, (3A + 10) + 10 = 2 [(A + 10) + 10]

3A + 20 = 2A + 40

X = 20

Needed Ratio = (3A + 10) : (A + 10)

= 70 : 30

= 7 : 3

13. When Shrujan was born, his father was 32 years older than his brother and his mother was 25 years older than his sister. If Shrujan's brother is 6 years older than Shrujan and his mother is 3 years younger than his father, how old was Shrujan's sister when Shrujan was born?

(a) 6 years (b) 8 years **(c) 10 years** (d) 12 years

Solution:

Shrujan age when he was born = 0 years

=> His brother's age = 6 year

=> His father's age = brother age + 32years = 6+32 = 38

=> His mother's age = father's age - 3 = 35

So sister's age = 35-25 = 10years.

14. Salman was born two years after his father's marriage. His mother is five years younger than his father but 20 years older than Salman who is 10 years old. At what age did the father get married?

(a) 25 years (b) 24 years **(c) 23 years** (d) 22 years

Solution:

Salman's present age = 10 years.

His mother's present age = (10 + 20) years = 30 years.

Salman's father's present age = (30 + 5) years = 35 years.

Salman's father's age at the time of Salman's birth = (35 - 10) years = 25 years.

Therefore Salman's father's age at the time of marriage = (25 - 2) years = 23 years.

15. If two times of the daughter's age in years is included to the mother's age, the total is 70 and if two times of the mother's age is included to the daughter's age, the total is 95. So, the Mother's age is:

(a) 40 (b) 38 (c) 30 (d) 41

Solution:

Let daughter's age = A and mother's age = B

Given: 2A+B = 70 and A+2B = 95

Solving B, we will get B = 40.

HOME WORK

16. The present average age of a family of five members is 26 years. If the present age of the youngest member in the family is ten years, then what was the average age of the family at the time of the birth of the youngest member? (Assume no death occurred in the family since the birth of the youngest)

(a) 19 years (b) 16 years (c) 18 years **(d) 20 years**

Solution:

Present total age of the members = 26(5) = 130 years.

Present age of the youngest member = 10 years

Present total age of the remaining four members = 130 -10 = 120 years

Their average age at the time of the birth of the youngest member = $\frac{[120-(4 \times 10)]}{4}$ = 30 – 10 = 20 years

17. If 6 years are subtracted from the present age of Siddharth and the remainder is divided by 18, then the present age of his grandson Vicky is obtained. If Vicky is 2 years younger to Harish whose age is 5 years, then what is the age of Siddharth?

(a) 72 years (b) 54 years **(c) 60 years** (d) 47 years

Solution:

Let the Present age of Siddharth is x

Vicky's age = 5-2 = 3

x-6/18 = 3

x-6 = 54

x = 60

Siddharth's present age = 60 years

18. The present age of Ravi's father is four times Ravi's present age. Five years back, Ravi's father was seven times as old as Ravi was at that time. What is the present age of Ravi's father?

(a) 84 years (b) 70 years **(c) 40 years** (d) 35 years

Solution:

Let present age of Ravi be x.

Then, present age of Ravi's father = 4x

Now, 5 yr ago,

Ravi's father age = 7 x Ravi's age

$4x - 5 = 7(x - 5)$

$4x - 5 = 7x - 35$

$3x = 30$

$x = 10$

Ravi's present age = x = 10 yr

Ravi's father's present age 4x = 4 x 10 = 40 yr

19. In a family, a couple has a son and a daughter. The age of the father is five times that of his son and the age of the daughter is half of her mother. The husband is ten years older to his wife and his son is ten years younger than the daughter. What is the age of the father?

(a) 50 years (b) 45 years (c) 40 years (d) 35 years

Solution:

The ratio of age of father and son = 5 : 1 (5x, x)

The age of daughter = (1/2)* mother's age

F = M + 10

M = 5x – 10

D = (5x – 10)/2

S = D – 10

X = [(5x – 10)/2] – 10

X = [5x – 10 – 20]/2

2x = 5x -30

3x = 30

X = 10

The age of father = 5x = 50 years

20. A woman says, "If you reverse my own age, the figures represent my husband's age. He is, of course, senior to me and the difference between our ages is one-eleventh of their sum." The woman's husband age is?

(a) 45 (b) 24 (c) 42 **(d) 54**

Solution:

By trial and error method from the given options,

as 54 - 45 = (1/11) x (45+54) = 99/11 = 9

Hence this satisfies the given conditions.

Then the woman's husband age is 54.