Time and Work

Points to remember

1. If A can finish a piece of work in `n' days, then A's 1 day's work is $\frac{1}{n}$.

2. If the number of men engaged to do a piece of work is changed in the ratio *a:b*, the time required for the work will be changed in the ratio *b:a*

3. If A is **X** times as good a workman as B, then A will take $\frac{1}{x}$ of the time that B takes to do a certain work.

4. If M_1 persons can do `$W_1$' works in $D_1$ days for $T_1$ hours and $M_2$ persons can do `W_2' works in D_2 days for T_2 hours then $M_1 D_1 T_1 W_2 = M_2 D_2 T_2 W_1$.

5. If A can finish a work in `x days and B can finish the same work in `y' days, then time taken by both to finish the work is $\frac{xy}{x+y}$ days

6. If A and B together can do a piece of work in **x**days and A alone can do it in y days then B alone can do it in $\frac{xy}{y-x}$ days

7. If A, B and C can do a work in x,y, and z days respectively, then all of them working together can finish the work in $\frac{xyz}{xy + yz + xz}$ days

8. If two taps A and B take *a* and *b* hours resepectively to fill a tank, then the two taps together fill $\frac{1}{a} + \frac{1}{b}$ part of the tank in an hour

and the entire tank is filled in $\frac{1}{\left(\frac{1}{2} + \frac{1}{b}\right)} = \frac{ab}{(a+b)}$ hours.

Solved Examples:

1. 8 boys can arrange all the books of school library in 12 days. In how many days can 6 boys arrange them?

Ans: $M_1 D_1 = M_2 D_2$

$$\therefore D_2 = \frac{8 \times 12}{6} = 16 \text{ days}$$

2. A can do a piece of work in 12 days and B alone can do it in 15 days. How much time will both take to finish the work?

Ans: A's 1 day's work = $\frac{1}{12}$

B's 1 day's work = $\frac{1}{15}$

$(A+B)$'s 1 day's work $= \frac{1}{12} + \frac{1}{15} = \frac{3}{20}$

∴ Both together can finish the work in

$\frac{20}{3}$ or $6\frac{2}{3}$ days

Using formula :

Time taken to finish the work

$$= \frac{xy}{x+y} = \frac{12 \times 15}{12 + 15}$$

$$= \frac{12 \times 15}{27} = \frac{20}{3} \text{ or } 6\frac{2}{3} \text{ days}$$

3. A and B together can do a piece of work in 12 days. B alone can finish it in 30 days. In

how many days can A alone finish the work?

Ans: (A+B)'s 1 day's work $= \dfrac{1}{12}$

B's 1 day's work $= \dfrac{1}{30}$

A's 1 day's work $= \dfrac{1}{12} - \dfrac{1}{30} = \dfrac{1}{20}$

∴ A alone can finish the work in 20 days

Using formula :

Time taken by A to finish the work $= \dfrac{xy}{y-x}$

$= \dfrac{12 \times 30}{30-12} = \dfrac{12 \times 30}{18} = 20 \text{ days}$

4. 16 men can do a piece of work in 10 days. How many men are needed to complete the work in 40 days?

Ans: Using formula.

$M_1 D_1 = M_2 D_2$

$M_1 = 16,\ D_1 = 10,\qquad D_2 = 40$

$16 \times 10 = M_2 \times 40$

$M_2 = \dfrac{16 \times 10}{40} = 4 \text{ men}$

5. A and B can do a piece of work in 18 days, B and C in 24 days, A and C in 36 days. In what time can they do it all working together?

Ans: [(A+B)+(B+C)+(A+C)]'s 1 day's work

$= \dfrac{1}{18} + \dfrac{1}{24} + \dfrac{1}{36} = \dfrac{1}{8}$

or 2 (A+B+C)'s 1 day's work $= \dfrac{1}{8}$

or (A+B+C)'s 1 day's work $= \dfrac{1}{16}$

So they all can finish the work in 16 days

6. 4 men and 6 women finish a job in 8 days, while 3 men and 7 women finish in 10 days. In how many days will 10 women finish it?

Ans: Considering one day's work,

$4M + 6W = \dfrac{1}{8}$ .... (1)

$3M + 7W = \dfrac{1}{10}$ ...... (2)

(1) x 3 - (2)x 4 gives

$18W - 28W = \dfrac{1}{10}$ or $10W = \dfrac{1}{40}$

∴ 10 Women can do the work in 40 days

7. A certain number of men complete a piece of work in 60 days. If there were 8 men more, the work could be finished in 10 days less. How many men were there originally?

Ans: Let the original number of men be x

$M_1 = x,\ D_1 = 60,\ M_2 = x+8,\ D_2 = 50,$

$M_1 D_1 = M_2 D_2$

$x \times 60 = (x+8) \times 50$

$60x - 50x = 400$

$10x = 400 \implies x = 40$

8. A cistern can be filled separately by two pipes in 12 and 16 minutes respectively. If both pipes are opened together, when will the cistern be filled?

Ans: Work done by Ist pipe in 1 minute $= \dfrac{1}{12}$

Work done by 2nd pipe in 1 minute $= \dfrac{1}{16}$

Work done by both in 1 minute $= \dfrac{1}{12} + \dfrac{1}{16}$

$= \dfrac{4+3}{48} = \dfrac{7}{48}$

∴ Both the pipes together will fill the cistern in $\dfrac{48}{7}$ minutes ie, $6\dfrac{6}{7}$ minutes.

Using formula :

Time taken to fill the cistern by both the pipes

$$= \frac{ab}{a+b} = \frac{12 \times 16}{12+16} = 6\frac{6}{7} \text{ minutes}$$

9.   Two inlet pipes of filling rate 10 minutes per cistern and 6 minutes per cistern and one outlet pipe of emptying rate 15 minutes per cistern are all fitted to a cistern and are opened together. Find when the cistern will be full?

Part of the cistern filled by working the three pipes in one minute.

$$= \frac{1}{10} + \frac{1}{6} - \frac{1}{15} = \frac{1}{5}$$

∴ Time needed to fill the full cistern = 5 minutes

10. A cistern can be filled separately by two pipes A and B in 36 minutes and 45 minutes respectively. A tap C at the bottom can empty the full cistern in 30 minutes. If the tap C is opened 7 minutes after the pipes A and B are opened, find when the cistern becomes full.

Ans: Part of the tank filled by A and B in 7 minutes

$$= 7 \times \left(\frac{1}{36} + \frac{1}{45} \right) = \frac{7}{20}$$

∴ $1 - \frac{7}{20} = \frac{13}{20}$ of the tank should be filled.

Part filled by *A, B* and *C* in 1 minutes

$$= \frac{1}{36} + \frac{1}{45} - \frac{1}{30} = \frac{1}{60}$$

∴ Time needed to fill $\frac{13}{20}$ part of the tank

$$= \frac{13}{20} \times 60 = 39 \text{ minutes}$$

∴ Total time taken to fill the tank

= 39 + 7 = 46 minutes

PRACTICE TEST

1.   Ramesh alone does a piece of work in 4 days and Suresh does it in 12 days. In how many days will the two do it together?

a) 3 days   b) $1\frac{1}{2}$ days

c) 4 days   d) 8 days

2.   Pranesh and Sumesh can finish a work in 16 days while Pranesh can do the same work in 24 days. In how many days can Sumesh alone finish the same work?

a) 40 days   b) 25 days
c) 48 days   d) 20 days

3.   Vinod can do a work in 15 days, Vijay in 25 days and Vinay in 30 days. How long will they take to do the work if they work together?

a) 12 days   b) $7\frac{1}{7}$ days

c) 70 days   d) 20 days

4.   If A, B and C together can finish a piece of work in 4 days, A alone in 12 days and B in 18 days, then C alone can do it in

a) 21 days   b) 15 days
c) 12 days   d) 9 days

5.   3 men or 6 women can do a piece of work in 20 days. In how many days will 12 men and 8 women do the same work?

a) $\frac{7}{2}$ b) $\frac{15}{4}$

c) 5   d) 4

6.   Some persons can do a piece of work in 12 days. Two times the number of those persons will do half of that work in

a) 3 days   b) 4 days
c) 6 days   d) 12 days

7.   3 men can do a work in 6 days. After 2 days 3 more men joined them. How many days will they take to complete the remaining work?

a) 5 days   b) 4 days
c) 3 days   d) 2 days

8.   A is twice as good a workman as B and they took 7 days together to do the work. B alone can do it in:

a) 12 days   b) 18 days
c) 21 days   d) 16 days

9. A can do a piece of work in 25 days and B can do the same work in 30 days. They work together for 5 days and then A leaves. B will finish the remaining work in
    a) 21 days   b) 11 days
    c) 20 days   d) 19 days

10. An army of 2000 men had enough food to last for 30 days. After 10 days 500 more men joined them. How long did the food last then?
    a) 20 days   b) 15 days
    c) 12 days   d) 16 days

11. Amar can do a piece of work in 15 days. When he had worked for 3 days, Sameer joined him and the remaining work was finished in 8 days. In how many days can Sameer alone finish the whole work?
    a) 30 days   b) 27 days
    c) 20 days   d) 24 days

12. A, B and C can do a piece of work in 18 days, 27 days and 36 days respectively. They start working together. After working for 4 days, A goes away and B leaves 7 days before the work is finished. Only C remains at work from beginning to end. In how many days was the whole work done?
    a) 17 days   b) 18 days
    c) 16 days   d) 15 days

13. A and B can do a piece of work in 6 days. B and C in 4 days and A and C in 5 days. How long will they take to complete the work if they work together?
    a) $3\dfrac{9}{37}$ days   b) 15 days
    c) $1\dfrac{23}{37}$ days   d) $6\dfrac{9}{37}$ days

14. A man, a woman or a boy can do a piece of work in 3, 4 and 12 days respectively. How many boys must assist 1 man and 1 women to do the work in 1 day?
    a) 5 boys   b) 6 boys
    c) 2 boys   d) 20 boys

15. Two pipes can fill a tank in 9 hours and 12 hous respectively. In how much time will they fill the tank when opened together?
    a) $3\dfrac{1}{2}$ hours   b) $5\dfrac{1}{7}$ hours
    c) 5 hours   d) $3\dfrac{2}{3}$ hours

16. A tap can fill a tank in 8 hours and another can empty it in 16 hours. If both the taps are opened simultaneously, the time (in hours) to fill the tank is:
    a) 8   b) 10   c) 16   d) 24

17. A cistern can be filled by a pipe in 15 hours. But due to a leak in the bottom the cistern is just full in 20 hours. When the cistern is full, the leak can empty it in:
    a) 60 hours   b) 40 hours
    c) 45 hours   d) 30 hours

18. A cistern can be filled by pipes A and B in 20 hours and 30 hours respectively. When full, the tank can be emptied by pipe C in 60 hours. If all the taps be turned on at the same time the cistern will be full in
    a) 10 hours   b) 15 hours
    c) 16 hours   d) 30 hours

19. Two pipes A and B can separately fill a tank in 12 minutes and 15 minutes respectively. Both the pipes are opend together but 4 minutes after the start, pipe A is turned off. How much time will it take to fill the tank?
    a) 11 min   b) 12 min
    c) 6 min   d) 8 min

20. Two pipes A and B can fill a cistern in 24 minutes and 32 minutes respectively. If both the pipes are opened together, then after how many minutes B should be closed so that the tank is full in 18 minutes?
    a) 6   b) 8   c) 10   d) 12

ANSWERS TO PRACTICE TEST

1. (a)	2. (c)	3. (b)	4. (d)	5. (b)	6. (a)	7. (d)	8.(c)
9. (d)	10. (d)	11. (a)	12. (c)	13. (a)	14. (a)	15. (b)	16.(c)
17. (a)	18. (b)	19. (c)	20. (b)				

Simple & Compound Interest

Interest is the money paid by the borrower to the lender for the use of money lent. Interest is of two kinds, simple and compound. Money borrowed or deposited is called the principal. The sum of principal and interest is called the amount.

i) Simple Interest:

If the interest on a certain sum borrowed for a certain period is reckoned uniformly, it is called Simple Interest.

The simple interest (I) for a principal (P) for (N) years at (R) rate percent per annum is

$$I = \frac{PNR}{100}$$

$$P = \frac{I \times 100}{N \times R}; \quad R = \frac{I \times 100}{P \times N}; \quad N = \frac{I \times 100}{P \times R}$$

ii) Compound Interest:

Money is said to be lent at Compound Interest if the interest is not paid as soon as it falls due, but is added to the principal after a fixed period, so that the amount at the end of the period, becomes the principal for the next period.

a) When interest is compounded annually:

$$Amount = P \left(1 + \frac{R}{100}\right)^N$$

b) When interest is compounded half yearly:

$$Amount = P \left(1 + \frac{R}{200}\right)^{2N}$$

c) When interest is compounded quarterly

$$Amount = P \left(1 + \frac{R}{400}\right)^{4N}$$

d) $C.I. = P \left(1 + \frac{R}{100}\right)^N - P$ (or)

$$= P \left[\left(1 + \frac{R}{100}\right)^N - 1\right]$$

Solved Examples:

1. Calculate the amount on Rs. 4480 at 8% per annum for 3 years.

Ans: S.I. $= \frac{P \times N \times R}{100}$

$= $ Rs. $\frac{4480 \times 3 \times 8}{100} = $ Rs. 1075.20

Amount $= $ Rs. (4480 + 1075.20)

$= $ Rs. 5555.20

2. S.I. on Rs. 1500 at 7% per annum for a certain time is Rs. 210. Find the time

Ans: Time, $N = \frac{210 \times 100}{1500 \times 7} = 2$ years

3. A certain sum of money at simple interest amounts to Rs. 1260 in 2 years and to Rs. 1350 in 5 years. The rate percent per annum is -------

Ans: S.I. for 3 years = Rs. (1350 - 1260) = Rs. 90

$\therefore$ S.I. for 2 years = Rs. $\frac{90}{3} \times 2 = $ Rs. 60

Principal = Rs. (1260 - 60) = Rs. 1200

Rate, $R = \dfrac{100 \times 60}{1200 \times 2}\% = 2.5\%$

4. A man invested $\frac{1}{3}$ of his capital at 7%, $\frac{1}{4}$ at 8% and the remainder at 10%. If his annual income is Rs. 561, the capital is ------

Let the capital be Rs. x Then,

$$\frac{x}{3} \times \frac{7}{100} \times 1 + \frac{x}{4} \times \frac{8}{100} \times 1 + \frac{5x}{12} \times \frac{10}{100} \times 1 = 561$$

$$\Rightarrow \frac{7x}{300} \times \frac{8x}{400} \times 1 + \frac{50x}{1200} = 561$$

$$\Rightarrow \frac{102x}{1200} = 561$$

$$\Rightarrow x = \frac{561 \times 1200}{102} = \text{Rs. } 6,600$$

5. Find the sum of money which increases $\frac{1}{10}$ of itself every year and amounts to Rs. 450 in 5 years at S.I.

Ans: Let P = Rs. 100

S.I. = Rs. $100 \times \frac{1}{10}$ = Rs. 10

S.I. for 5 years = Rs. 50

Amount after 5 years = 100 + 50

= Rs. 150

If the amount is Rs. 150, P = Rs. 100

∴ If the amount is Rs. 450,

$$P = \frac{100 \times 450}{150} = \text{Rs.} 300$$

6. A sum was put at simple interest at a certain rate for 2 years. Had it been put at 1% higher rate, it would have fetched Rs. 24 more. Find the sum.

Ans: Let the sum be Rs. x and rate be R% and (R+1)%

Then, $\dfrac{x \times (R+1) \times 2}{100} - \dfrac{x \times R \times 2}{100} = 24$

$$\Rightarrow \frac{2xR}{100} + \frac{2x}{100} - \frac{2xR}{100} = 24$$

$$x = \frac{24 \times 100}{2} = \text{Rs.} 1,200$$

7. Find compound interest on Rs. 5,000 at 10% per annum for 3 years

Ans: Amount $= P\left(1 + \dfrac{R}{100}\right)^N$

$$= 5000 \left(1 + \frac{10}{100}\right)^3 = \text{Rs. } 6,655$$

∴ Compound Interest

= Rs. (6,655 - 5,000) = Rs. 1,655

8. If the compound interest on a certain sum for 3 years at 20% per annum is Rs. 728, find the simple interest.

Ans: Given that $P\left(1 + \dfrac{20}{100}\right)^3 - P = \text{Rs. } 728$

or 1.728 P - P = Rs. 728

∴ P = Rs. 1,000

Now, S.I. = Rs. $\dfrac{1000 \times 3 \times 20}{100} = \text{Rs.} 600$

9. The difference between the compound interest and the simple interest on a certain sum at 10% per annum for two years is Rs. 60. Find the sum.

Ans: Let the sum be Rs. x

So, S.I. = Rs. $\dfrac{x \times 10 \times 2}{100} = \text{Rs.} \dfrac{x}{5}$

C.I. = Rs. $x\left[1 + \dfrac{10}{100}\right]^2 - x = \text{Rs.} \dfrac{21x}{100}$

$$\therefore C.I - S.I = \frac{21x}{100} - \frac{x}{5} = \frac{x}{100} = Rs.60$$

$$\therefore x = Rs. \ 6,000$$

PRACTICE TEST

1. At what rate percent per annum will a sum of Rs. 3,600 become Rs. 4,500 in 10 years at simple interest?
  a) 5 %
  b) 2.5%
  c) 10%
  d) 6.75%

2. A sum of Rs. 1600 lent at simple interest at 12.5% per annum will become double in
  a) 6 years
  b) $7\frac{1}{2}$ years
  c) 8 years
  d) $9\frac{1}{4}$ years

3. The difference in simple interest at 13% and 12% p.a. of a sum in one year is Rs. 110. Then the sum is
  a) Rs. 13,000
  b) Rs. 15,000
  c) Rs. 10,000
  d) Rs. 11,000

4. The difference in the interests received from two different banks on Rs. 1000 for 2 years is Rs. 20. Thus, the difference in their rates is
  a) 2 %
  b) 1 %
  c) 1.5%
  d) 0.5%

5. Find out the capital required to earn a monthly interest of Rs. 600 at 6% simple interest.
  a) Rs. 1 lakhs
  b) Rs. 1.2 lakhs
  c) Rs. 1.1 lakhs
  d) Rs. 1.3 lakhs

6. A man invested 1/3rd of the sum at 7%, 1/4th at 8% and the remaining at 10% for one year. If the annual interest is Rs. 408, then the investment is
  a) Rs. 8,400
  b) Rs. 4,800
  c) Rs. 5,000
  d) Rs. 7,200

7. The difference in simple interest on a certain sum of money for 3 years and 5 years at 18% per annum is Rs. 2,160. Then the sum is
  a) Rs. 6,500
  b) Rs. 4,500
  c) Rs. 6,000
  d) Rs. 7,500

8. At what rate percent per annum simple interest will a sum of money triple itself in 25 years?
  a) 8
  b) $8\frac{1}{3}$
  c) $9\frac{1}{11}$
  d) 10

9. What sum of money lent out at compound interest will amount to Rs. 968 in 2 years at 10% per annum, interest being charged annually?
  a) Rs. 900
  b) Rs. 825
  c) Rs. 780
  d) Rs. 800

10. The difference between compound interest and simple interest on certain sum of money in 2 years at 4% per annum is Rs. 50. Find the sum
  a) Rs. 30,550
  b) Rs. 31,250
  c) Rs. 25,670
  d) Rs. 35,400

11. A sum of money lent at compound interest amounts to Rs. 1210 in two years and to Rs. 1464.10 in 4 years. Find the rate of interest.
  a) 12%
  b) 10%
  c) 8 %
  d) 15%

12. A man borrows Rs. 4,000 at 8% per annum on compound interest. At the end of every year he pays Rs. 1,500 as part payment of loan and interest. How much does he still owe to the bank after 3 such annual payments?
  a) Rs. 1,799
  b) Rs. 169.25
  c) Rs. 2,000
  d) Rs. 234

ANSWERS TO PRACTICE TEST

1. (b)   2. (c)   3. (d)   4. (b)   5. (b)   6. (b)   7. (c)   8.(a)

9. (d)   10. (b)   11. (b)   12. (b)

Problems on Age

Solved Examples

1. A father was 4 times as old as his son 8 years ago. Eight years hence, father will be twice as old as his son. Find their present ages.

Ans: Let son's age 8 years ago be x years.

Thus, father's age at that time = $4x$ years

After 8 years, son's age

= $(x-8) +8 = (x-16)$ years

After 8 years, father's age

= $(4x-8)+8 = (4x-16)$ years

∴ $2(x-16) = 4x + 16$ or $x=8$

∴ The present age of the son = $x-8 = 16$ years

∴ The present age of the father

= $4x-8 = 32+8= 40$ years

2. A is twice as old as B was two years ago. If the difference in their ages be 2 years, find A's age.

Ans: Let B's age 2 years ago be x years

∴ A's present age = $2x$ years

Also $2x - (x-2) = 2$ or $x=4$

∴ A's age = $2\times4 = 8$ years

3. The age of a father 10 years ago was thrice the age of his son. Ten years hence, the father's age will be twice that of his son. The ratio of their present ages is:

Ans: Let the present ages of father and son be x and y years respectively.

Then $(x-10) = 3$ (y-10) or

$3y-x= 20$ ------ (1)

and $(x-10) = 2$ (y+10) or

$x-2y = 10$ ----- (2)

$(1) + (2) \Rightarrow y = 30$

Substituting y = 30 in equation (1) we get $x = 70$

Ratio of their ages = 70 : 30 or 7:3

4. Ratio of Ashok's age to Pradeep's age is equal to 4:3. Ashok will be 26 years old after 6 years. How old is Pradeep now?

Ans: Ashok's present age = (26-6)

= 20 years

Pradeep's present age = $20 \times \dfrac{3}{4}$

= 15 years

5. The ratio of the ages of father and son at present is 6:1. After 5 years the ratio will become 7:2. The present age of the son is:

Ans: Let their present ages be 6x and x years respectively.

Then $\dfrac{6x+5}{x+5} = \dfrac{7}{2}$

= $2 (6x+5) = 7 (x+5) \Rightarrow x=5$

Present age of the son = 5 years.

6. Three years ago the average age of A and B was 18 years. With C joining them now, the average becomes 22 years. How old is C now?

Ans: (A+B)'s total present age

= $(2\times18+3+3) = 42$ years

(A+B+C)'s total present age

= 22 x 3 = 66 years

C's age = 66-42 = 24 years

PRACTICE TEST

1. A father is twice as old as his son. 20 years ago, the age of the father was 12 times the age of the son. The present age of the son is

    a) 44 years   b) 22 years

    c) 40 years   d) 20 years

2. The respective ages of a father and his son are 41 and 16 years. In how many years will the father be twice as old as his son?

    a) 19 years   b) 9 years

    c) 15 years   d) 10 years

3. The ratio of ages of Mohan and Sohan is 4:3. The sum of their ages is 42 years. The age of Mohan is

    a) 24 years   b) 18 years

    c) 32 years   d) 30 years.

4. The ratio of ages of Rani and Vinita is 3:5. The difference in their ages is 12 years. Then the age of Vinita is

    a) 20 years   b) 15 years

    c) 18 years   d) 30 years

5. Two years ago, Vinod was four times as old as Indhu. 8 years hence, Vinod's age will exceed Indhu's age by 12 years. The ratio of the present ages of Vinod and Indhu

    a) 5:1   b) 4:1

    c) 3:1   d) 2:1

6. The ages of A and B are in the ratio 3:5. After 9 years the ratio of their ages will be 3:4. The present age of B is

    a) 9 years   b) 15 years

    c) 20 years   d) 16 years

7. A's mother was four times as old as A ten years ago. After 10 years she will be twice as old as A. Then, A's present age is

    a) 30 years   b) 25 years

    c) 20 years   d) 15 years

8. A father's age is three times the sum of the ages of his two children, but 20 years hence his age will be equal to sum of their ages. Then the fathers age is -

    a) 30 years   b) 40 years

    c) 35 years   d) 45 years

9. The ratio of the father's age to the son's age is 4:1. The product of their ages is 196. The ratio of their ages after 5 years will be:

    a) 3:1   b) 10:3

    c) 11:4   d) 14:5

10. In 10 years, A will be twice as old as B was 10 years ago. If A is now 9 years older than B, find the present age of B.

    a) 39   b) 27

    c) 45   d) 26

11. A is as much younger than B as he is older than C. If the sum of B's and C's ages is 40 years, find the age of A.

    a) 40 years   b) 10 years

    c) 25 years   d) 20 years

12. The ages of Ram and Mohan differs by 16 years. Six years ago, Mohan's age was thrice as that of Ram's. Then Ram's present age is

    a) 15 years   b) 20 years

    c) 14 years   d) 30 years

13. A father is 4 times as old as his son; in 20 years he will be only twice as old as his son. Then the respective ages of father and son are

    a) 40, 10 years   b) 80, 20 years

    c) 60, 15 years   d) 48, 12 years

14. The difference between the ages of two persons is 8 years. 15 years ago, the elder one was twice as old as the younger one. Then the present age of the elder person is

    a) 23 years   b) 31 years

    c) 34 years   d) 40 years

ANSWERS TO PRACTICE TEST

1. (b)   2. (b)   3. (a)   4. (d)   5. (c)   6. (b)   7. (c)   8.(a)

9. (c)   10. (a)   11. (d)   12. (c)   13. (a)   14. (b)