

RRB NTPC

Arithmetic Ques. asked in Previous Years

Part I

Time & Work, Ratio & Proportion



1. Atul and Vinay can complete work in 5 days by working together. If Vinay can complete the work alone in 8 days. Then how many days will Atul take to finish the work alone?

- (A) $\frac{40}{3}$ days
- (B) $\frac{20}{3}$ days
- (C) 9 days
- (D) 10 days

A. D
B. C
C. B
D. A
Ans. D

Sol.

Let the total work be = $LCM(5,8) = 40$

Efficiency of Atul and Vinay = $\frac{40}{5} = 8$ unit

Efficiency of Vinay = $\frac{40}{8} = 5$ unit

Atul's Efficiency = $8 - 5 = 3$ unit

Required time for Atul = $\frac{40}{3}$ days.

2. Anti can do a work in 14 days and Rohit complete the work in 21 days. If they work together for some days and after that Anil leaves the work. If Rohit worked alone for three days then find the total days to complete the work.

- (A) $\frac{31}{5}$
- (B) $\frac{51}{5}$
- (C) $\frac{21}{5}$
- (D) $\frac{13}{5}$

A. B
B. D
C. C
D. A
Ans. A

Sol.

Let the total work be
= $LCM(14,21) = 84$

Anil's efficiency = $\frac{84}{14} = 6$ unit

Rohit's efficiency = $\frac{84}{21} = 4$ unit

Let they work together for x days.

A.T.Q.

$$(6 + 4)x + 4 \times 3 = 84$$

$$10x = 72$$

$$x = \frac{72}{10} = \frac{36}{5}$$

Total no. of days = $\frac{36}{5} + 3$

$$= \frac{51}{5} \text{ days.}$$

3. 30 students can complete 60% of a project in 5 days in a university. How much part of project could be completed by 45 students in 2 days.

- (A) 36%
- (B) 45%
- (C) 33%
- (D) 32%

A. (B)
B. (C)
C. (A)
D. (D)

Ans. C

Sol.

$$\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$$

$$\frac{30 \times 5 \times \frac{60}{100}}{\frac{60}{2}} = \frac{45 \times 2}{W_2}$$

$$W_2 = \frac{9}{\frac{5 \times 50}{45 \times 2}}$$

$$W_2 = \frac{18 \times \frac{2}{50}}{50}$$

$$W_2 = 36\%$$

Option C is correct response.

4. A can complete a work in 10 days, B in 15 days and C in 20 days. A and B worked together for four days and after that C joined at its place of A. How many day it will take to complete work.

(A) 16 days



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(B) $\frac{48}{7}$ days

(C) $\frac{42}{7}$ days

(D) $\frac{18}{7}$ days

A. (C)

B. (B)

C. (A)

D. (D)

Ans. B

Sol.

A = 10 days

B = 15 days

C = 20 days

Total work = 60 (LCM)

One day work of A = $60/10 = 6$ w/d

B = $60/15 = 4$ w/d

C = $60/20 = 3$ w/d

A and B work together for 4 days.

So, the work done by them is - $(6+4) \times 4 = 10 \times 4 = 40$

Remaining work = $60 - 40 = 20$

Now, B and C will do the remaining work in - $20/7$

Total time = $4 + 20/7 = (28+20)/7 = 48/7$

Option B is correct.

5. A is three times more efficient than B. Find the ratio of days, that will take by A and B to the work X.

(A) 1 : 3

(B) 4 : 1

(C) 1 : 4

(D) 3 : 1

A. (C)

B. (A)

C. (B)

D. (D)

Ans. A

Sol.

Efficiency of A is 3 times more than B .

I.e. if B = 1, A = 1 + 3 = 4

Efficiency of B : A = 1 : 4

Therefore, ratio of days A : B = 1 : 4

As time is inversely proportional to efficiency.

Option A is correct.

6. Arun and Amit can do a work in 9 and 12 days respectively. If they work alternatively and first Amit starts then.

How many days will require to complete 35/36 part of the work?

(A) 10 days

(B) 12 days

(C) 5 days

(D) 8 days

A. (C)

B. (A)

C. (D)

D. (B)

Ans. B

Sol.

7. 12 men and 16 woman can complete a work in 4 days. A man alone takes 80 days to complete the work then. How many days will require for a woman to complete the work?

(A) 160

(B) 150

(C) 130

(D) 175

A. (D)

B. (A)

C. (C)

D. (B)

Ans. B

Sol. According to question:

$(12M + 16W) * 4 \text{ days} = 1M * 80 \text{ days}$
 $\Rightarrow 12m + 16W = 20M$

$\Rightarrow 8M = 16W \Rightarrow M = 2W \dots\dots(i)$

Now, $12m + 16W = 12(2W) + 16W = 40W$

Let a woman takes x days to complete the work

$1W * x = 40W * 4$

$x = 160 \text{ days}$

8. Atul can complete a work in 18 days Aradhya is 50% more fast then Atul. How much more time will Atul take than Aradhya to complete the work?

(A) 12

(B) 6

(C) 18

(D) 10

A. (A)

B. (D)

C. (C)

D. (B)

Ans. D

Sol.

Let efficiency of Atul = 2x

Then efficiency of Aradhya = 3x



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A.T.Q.

Let Aradhya takes d days.

$$18 \times 2x = d \times 3x$$

$$d = 12 \text{ days.}$$

$$\text{Required days} = 18 - 12 = 6 \text{ days.}$$

9. B's efficiency is three times of A's and C's efficiency is 0.75 times of A's. When A, B and C do a work alone, then what will be the ratio of days that taken by them to finish the work.

(A) 4 : 1 : 3

(B) 3 : 1 : 4

(C) 2 : 3 : 1

(D) 5 : 1 : 2

A. (D)

B. (C)

C. (B)

D. (A)

Ans. C

Sol.

Ratio of efficiency

$$\frac{B}{A} = \frac{3 \times 4}{1 \times 4} = \frac{12}{4}$$

$$\frac{C}{A} = \frac{3}{4}$$

$$A : B : C = 4 : 12 : 3$$

Let the total work = 12 unit

Then ratio of time taken A : B : C

$$= \frac{12}{4} : \frac{12}{12} : \frac{12}{3}$$

$$= 3 : 1 : 4.$$

10. Mayank, Deepak and Pawan can complete a work in 5, 10 and 15 days respectively. If they work together and earn Rs.11000 then what will be the part of Deepak?

(A) Rs.2000

(B) Rs.6000

(C) Rs.4000

(D) Rs.3000

A. (B)

B. (D)

C. (A)

D. (C)

Ans. B

Sol.

$$\text{Let the total work} = \text{LCM}(5, 10, 15) = 30$$

$$\text{The efficiency of Mayank} = 30/5 = 6$$

$$\text{The efficiency of Deepak} = 30/10 = 3$$

$$\text{The efficiency of Pawan} = 30/15 = 2$$

$$\text{So, Share of Deepak} = (3/11) \times 11000 = \text{Rs.3000}$$

11. A and B can complete a work in 10 days. , B and C in 15 days and A and C in 20 days. How many days will B alone take to complete the work?

(A) 20

(B) 24

(C) 120/7

(D) 60

A. (B)

B. (D)

C. (A)

D. (C)

Ans. D

Sol.

A and B can complete a work = 10 days

B and C can complete a work = 15 days

A and C can complete a work = 20 days

Total work done by (A+B+C) = LCM of (10, 15, 20) = 60 units

$$\text{Efficiency of (A+B)} = 60/10 = 6$$

$$\text{Efficiency of (B+C)} = 60/15 = 4$$

$$\text{Efficiency of (A+C)} = 60/20 = 3$$

So, Efficiency of (A+B+C) together =

$$\frac{6+4+3}{2} = \frac{13}{2}$$

Efficiency of B = Efficiency of (A+B+C) together - Efficiency of (A+C)

$$= 13/2 - 3 = 7/2$$

Time taken by B alone to complete the work = $60/(7/2) = 120/7$ days

12. Kaveri's efficiency of doing a work is two times more than Kanchan's and three times more than Kalpna's. If they do altogether, then the work is completed in a day. How much time will Kalpana take to complete the work.

(A) 6.33 days

(B) 2 days

(C) 3 days

(D) 9 days

A. (C)

B. (A)

C. (B)

D. (D)

Ans. B

Sol.



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Let the efficiency of Kaveri be $12x$
Kaveri's efficiency is 2 times more than Kanchan which means that Kaveri's efficiency is 3 times of Kanchan's efficiency.

Efficiency of Kanchan = efficiency of Kaveri/3 = $4x$

Kaveri's efficiency is 3 times more than Kalpana which means that Kaveri's efficiency is 4 times of Kalpana's efficiency.

Efficiency of Kalpana = efficiency of Kaveri/4 = $3x$

Total efficiency of a day = $12x + 4x + 3x$

Their one day work = total work = $19x$

Time taken by Kalpana to complete the work = $19x/3x = 6.33$ days

13. Josna takes 4 hours 30 minutes in walking a distance and riding back to the same place where she started from. She could walk both ways in 5 hours 40 minutes. The time taken by her to ride back both ways is:

(A) 3 hours 20 minutes

(B) 3 hours 35 minutes

(C) 3 hours 45 minutes

(D) 3 hours 15 minutes

A. (C)

B. (D)

C. (B)

D. (A)

Ans. D

Sol.

Time taken by Josna to walk both ways = 5 hours 40 minutes

Time taken by Josna to walk one way only = $5 \text{ hours } 40 \text{ minutes} / 2 = 2 \text{ hours } 50 \text{ minutes}$

Therefore time taken by her to ride one side = $4 \text{ hours } 30 \text{ minutes} - 2 \text{ hours } 50 \text{ minutes} = 1 \text{ hour } 40 \text{ minutes}$

Time taken by her to ride both ways = $2 \times (1 \text{ hour } 40 \text{ minutes}) = 3 \text{ hours } 20 \text{ minutes}$

14. Radha is twice as good a tradesman as Verma and together they finish a piece of work in 19 days. In how many days will Verma alone finish the work?

(A) 38

(B) 57

(C) 76

(D) 50

A. (C)

B. (D)

C. (B)

D. (A)

Ans. C

Sol.

Let efficiency of Radha = 2 units per day

Let efficiency of Verma = 1 unit per day

Total efficiency = $2 + 1 = 3$ units / day

Total work = $19 \times 3 = 57$ units

Time taken by Verma to finish the whole work alone = $57/1 = 57$ days

15. Manas is twice as good as workman as Manu and together they finish a piece of work in 21 days. In how many days will Manu alone finish the work?

(A) 42

(B) 63

(C) 84

(D) 25

A. (A)

B. (D)

C. (B)

D. (C)

Ans. C

Sol.

Ratio of efficiency of Mans and Manu = $2:1$

Together their efficiency = 3

Together they finish work in 21 days,

So total work = $21 \times 3 = 63$

Time taken by Manu only to finish that work = $\frac{\text{Total work}}{\text{Efficiency of Manu}} = \frac{63}{1} = 63$ days

16. E and F together can do a work in 10 days. If E alone can do it in 30 days, F alone can do it in _____ days.

(A) 15

(B) 20

(C) 25

(D) 18

A. (D)

B. (C)

C. (B)

D. (A)

Ans. D

Sol.

Let the total work be LCM of 10 and 30 = 30 units

Efficiency of E+F = $30/10 = 3$ units / day

Efficiency of E = $30/30 = 1$ unit/day



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Efficiency of F = 3-1 = 2 units / day
 Time taken by F to complete the work =
 $30/2 = 15$ days

17. S can finish 50% of a work in a day.
 T can do 25% of the work in a day. Both
 of them together will finish the work in
 _____ days.

- (A) 2.66
- (B) 2.33
- (C) 1.33
- (D) 1.67

- A. (D)
- B. (B)
- C. (C)
- D. (A)

Ans. C

Sol.

Given, work done by S in a day = 50%
 and by T in one day = 25%
 Then , work done by S + T = 75 % = $\frac{3}{4}$
 Time taken by S + T to complete the
 whole work = $4/3$ days = 1.33 days

18. If 4 men can paint a wall of length
 96m in 2 days, how long will it take 6 men
 to paint a wall of 72 metre length?

- (A) 1 day
- (B) 2 days
- (C) 3days
- (D) 4days

- A. (A)
- B. (C)
- C. (D)
- D. (B)

Ans. A

Sol.

Solution.

$$\frac{M_1 \times D_1 \times H_1}{W_1} = \frac{M_2 \times D_2 \times H_2}{W_2}$$

$$D_2 = \frac{M_1 \times D_1 \times H_1 \times W_2}{M_2 \times H_2 \times W_1} = \frac{4 \times 2 \times 72}{96 \times 6} = 1 \text{ day}$$

19. 30 Men Completes a work in 16 days
 while working 5 hours. The same work
 will be completed in how many days by
 40 men working 6 hours daily.

- (A) 12 days
- (B) 10 days
- (C) 15 days
- (D) 18 days

A. (A)

- B. (D)
- C. (C)
- D. (B)

Ans. D

Sol.

Using below formula -

$$M_1 D_1 H_1 = M_2 D_2 H_2$$

$$30 \times 16 \times 5 = 40 \times D_2 \times 6$$

$$D_2 = 10 \text{ days}$$

20. P, Q and R together cut a field's crop
 in 6 days. If P takes 10 days, Q takes 24
 days then in how many days R alone cut
 this crop?

- (A) 32 days
- (B) 40 days
- (C) 45 days
- (D) 60 days

A. (A)

B. (C)

C. (B)

D. (D)

Ans. C

Sol.

$$P = 10 \text{ days}$$

$$Q = 24 \text{ days}$$

$$P+Q+ R = 6 \text{ days}$$

Let the total work = LCM of (10, 24, 6)
 = 120 units

Efficiency of P = $120/10 = 12$ units per
 day

Efficiency of Q = $120/24 = 5$ units per day

Efficiency of P +Q+ R = $120/6 = 20$ units
 per day

$$12 + 5 + R = 20$$

Efficiency of R = 3 units per day

Time taken by R = $120 / 3 = 40$ days

21. A and B completes a work together in
 40 days, their efficiency is in the ratio of
 8:5. A alone can complete the work in
 how many days.

- (A) 65 days
- (B) 40 days
- (C) 72 days
- (D) 104 days

A. (D)

B. (B)

C. (C)

D. (A)

Ans. D

Sol.



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Let the efficiency of A and B be $8x$ and $5x$ respectively.

Total work = Efficiency of A and B together \times Time taken = $40 \times 13x = 520x$

Time taken by A to complete the whole work = $520x/8x = 65$ days.

22. X and Y finish a work in 6 days. If X alone can finish the work in 9 days, how many days will it take Y to finish the work alone?

- (A) 15
- (B) 12
- (C) 18
- (D) 21

- A. (A)
- B. (C)
- C. (D)
- D. (B)

Ans. B
Sol.

Time taken by X and Y together to do a work = 6 days

Time taken by X alone to do that work = 9 days

Let the total work be LCM of (6, 9) = 18

Efficiency of X and Y together = $18/6 = 3$

Efficiency of X alone = $18/9 = 2$

So efficiency of Y alone = $3 - 2 = 1$

Time taken by Y to do the work alone = $18/1 = 18$ days

23. A and B together can complete a work in 6 days. A alone can complete the work in 12 days, then how many days will B take alone to complete the work?

- (A) 4
- (B) 6
- (C) 8
- (D) 12

- A. (B)
- B. (D)
- C. (C)
- D. (A)

Ans. B
Sol.

Time taken by A and B together = 6 days

A can complete the work in 12 days

Total work (LCM of 6 and 12) = 12

Efficiency of A = $12/12 = 1$

Efficiency of A and B together = $12/6 = 2$

Efficiency of B = $2 - 1 = 1$

Time taken by B to complete the work = $12/1 = 12$ days

24. 30 men can do a work in 80 days. How many days will 20 men take to complete twice the work?

- (A) 120
- (B) 180
- (C) 240
- (D) 280

- A. (D)
- B. (A)
- C. (B)
- D. (C)

Ans. D
Sol.

30 men can do a work in 80 days

20 men can do twice of work in

$$\frac{m_1 d_1}{W_1} = \frac{m_2 d_2}{W_2}$$

$$\frac{30 \times 80}{1} = \frac{20 \times d_2}{2}$$

$d_2 = 240$ days

therefore time taken by 20 men to complete twice the work is = 240 days

25. A can complete a work in 40 days and B can do the same piece of work in 30 days. If they work together then how much time will require to complete the work.

- (A) $17\frac{1}{7}$
- (B) 70
- (C) $22\frac{1}{7}$
- (D) $29\frac{1}{7}$

- A. (D)
- B. (C)
- C. (B)
- D. (A)

Ans. D

Sol. Time taken by A = 40 days

Time taken by B = 30 days

Work completed in $1/[(1/40 + 1/30)] = 120/7$

$= 17\frac{1}{7}$

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26. 50 man can do a piece of work in 20 days. How many days 18 man will take to complete the work?

- (A) 12
- (B) $15\frac{1}{4}$
- (C) 20
- (D) $55\frac{5}{9}$

- A. (A)
- B. (D)
- C. (B)
- D. (C)

Ans. B

$$\text{Sol. } (50 \times 20) = 18 \times x$$

$$x = 55\frac{5}{9} \text{ days}$$

27. S and T can finish a work in 50 days. They worked together for 20 days and then left. How much of the work is left?

- (A) $\frac{3}{5}$
- (B) $\frac{1}{3}$
- (C) $\frac{1}{2}$
- (D) $\frac{2}{5}$

- A. (C)
- B. (D)
- C. (B)
- D. (A)

Ans. D

Sol.

A 50 day work is worked on for 20 days. So clearly 30 days of work is left, hence $\frac{3}{5}$ of work is left.

28. P can do a work in 10 days. Q can do the same work in 15 days. If they work together for 5 days, how much of the work will they complete?

- (A) $\frac{1}{2}$
- (B) $\frac{2}{3}$
- (C) $\frac{1}{3}$
- (D) $\frac{5}{6}$

- A. (D)
- B. (B)
- C. (A)
- D. (C)

Ans. A

Sol.

P = 10 days

Q = 15 days

$$5 \times \left(\frac{1}{10} + \frac{1}{15} \right) = \frac{5}{6}$$

29. Aman and Ajay separately can build a wall in 9 days and 12 days respectively. In how many days can they erect the same wall if they work together?

(A) $5\frac{1}{7}$

(B) $11\frac{1}{2}$

(C) 2

(D) 7

A. (A)

B. (D)

C. (B)

D. (C)

Ans. A

Sol.

$$\left. \begin{array}{l} \text{Aman} = 9 \\ \text{Ajay} = 12 \end{array} \right\} 36 \left\{ \begin{array}{l} 4 \\ 3 \\ 7 \end{array} \right.$$

Total days they required if the work

together is = $\frac{36}{7}$

= $5\frac{1}{7}$ days

30. G is twice as fast as S in doing work. If G can do work in 30 days less than S, how many days will they take to complete the work together?

- (A) 25
- (B) 20
- (C) 22
- (D) 15

- A. (A)
- B. (D)
- C. (C)
- D. (B)

Ans. D

Sol.

$$G = 2S$$

Since G works in 30 days less than S then S takes 60 days and G takes 30 days. Let them complete the work in x days

$$\frac{1}{x} = \frac{1}{60} + \frac{1}{30}$$

$$x = 20 \text{ days}$$



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31. B has 32 pens, 24 pencils and 16 erasers. How many sets of these three items can B make without any left over?

- (A) 6
 - (B) 7
 - (C) 8
 - (D) 9
- A. (B)
B. (A)
C. (D)
D. (C)

Ans. C

Sol.

In such questions, We have to find the highest common factor from the group of three sets so that no group is left with incomplete set.

$$\begin{aligned} \text{so, HCF}(32,24,16) \\ &= \text{HCF}(2 \times 2 \times 2 \times 2 \times 2, \quad 2 \times 2 \times 2 \times 3, \\ &2 \times 2 \times 2 \times 2) \\ &= 2 \times 2 \times 2 = 8 \end{aligned}$$

this means if we drew set of 8-8 items from each group we will get numeral no. of sets.

$$\text{Total no. of sets} = (32+24+16)/8 = 9$$

32. 10 people can do a work in 30 days. In how many days, can 15 people complete double the work?

- (A) 20
 - (B) 25
 - (C) 40
 - (D) 45
- A. (D)
B. (A)
C. (B)
D. (C)

Ans. D

Sol.

$$\begin{aligned} M_1D_1/W_1 &= M_2D_2/W_2 \\ 10 \times 30 &= 15 \times d/2 \\ d &= 40 \text{ days} \end{aligned}$$

33. 15 men can do a piece of work in 10 days. If to complete the work 10 men more were added then what would be the time to finish the work?

- (A) 8
 - (B) 10
 - (C) 15
 - (D) 6
- A. (C)

- B. (D)
- C. (B)
- D. (A)

Ans. B

$$\text{Sol. } M_1D_1 = M_2D_2$$

$$15 \times 10 = 25 \times D_2$$

$$D_2 = 6 \text{ days}$$

34. 9 women can complete a work in 50 days. If 6 more women join the work, then how many days before the work will be completed?

- (A) 30
- (B) 20
- (C) 15
- (D) 25

- A. (A)
- B. (B)
- C. (C)
- D. (D)

Ans. B

$$\text{Sol. } M_1D_1 = M_2D_2$$

$$9 \times 50 = 15 \times D_2$$

$$D_2 = 9 \times 50 / 15 = 30 \text{ days}$$

Thus work is completed $(50-30) = 20$ days before the work is completed

35. Vikram and Vivek can complete a work in 50 days. They together work for 20 days and then left the work. Find the work is completed by them.

- (A) 3/5
- (B) 1/3
- (C) 1/2
- (D) 2/5

- A. (B)
- B. (D)
- C. (A)
- D. (C)

Ans. B

Sol. Complete work in 50 days

$$1 \text{ day work} = 1/50$$

$$20 \text{ day work} = 20/50 = 2/5$$

36. 15 men complete a work in 30 days. How many days will 9 men take to complete the same work?

- (A) 35
- (B) 50
- (C) 45
- (D) 40

- A. (D)
- B. (B)



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C. (A)
D. (C)
Ans. B

Sol.
 $M_1D_1 = M_2 D_2$
 $15*30 = 9*D_2$
Number of days taken by 9 men = 50 days

37. If A : = 3 : 4 and B : C = 6 : 5, then what will be the value of A : (A + C).

(A) 9 : 11
(B) 9 : 10
(C) 9 : 19
(D) 6 : 7

A. C
B. A
C. B
D. D
Ans. A

Sol. .

$$A : B = 3 : 4$$

$$B : C = 6 : 5$$

Then,

$$A : B : C = 9 : 12 : 10$$

Required -

$$\frac{A}{A + C} = \frac{9}{9 + 10} = \frac{9}{19}$$

38. In a university, 25% male teacher is equal to the 1/3rd part of number of female teacher. Find the ratio of number of male teacher to number of female teacher.

(A) 4 : 3
(B) 3 : 4
(C) 2 : 3
(D) 3 : 2

A. (C)
B. (B)
C. (D)
D. (A)

Ans. D

Sol. According to the question,
25% of Male teachers = 1/3rd of Female Teachers

(25/100) of Male teachers = (1/3) of Female Teachers

No. Of Male Teachers/ No. of Female Teachers = 4/3

So, the required ratio is = 4 : 3

39. 54 is divided in two part in such a way that the sum of 10 times of first part and 22 times of second part is 780. Find largest part.

(A) 34
(B) 28
(C) 32
(D) 36
A. (A)
B. (C)
C. (B)
D. (D)

Ans. A

Sol.

Let first part is x and second part is y.

$$\text{So, } x + y = 54 \dots\dots\dots(1)$$

And

$$10x + 22y = 780 \dots\dots\dots(2)$$

By solving equation (1) and (2)

$$x = 34 \text{ and } y = 20$$

So the largest part is x=34

40. Ratio of monthly salary of Rohit and Sachin is 5 : 7 and their expenditure's ratio is 2 : 3. If saving of both Rohit and Sachin is ` 1000. Then what is the salary of Rohit?

(A) 3500
(B) 5000
(C) 7000
(D) 4000

A. (A)
B. (B)
C. (D)
D. (C)

Ans. B

Sol.

Let the monthly salary of Rohit and Sachin be 5x and 7x respectively.

We know that Income-Saving = Expenditure

So according to question,

$$\frac{5x - 1000}{7x - 1000} = \frac{2}{3}$$

$$15x - 3000 = 14x - 2000$$

$$x = 1000$$

Therefore, the salary of Rohit,

$$5x = 5 \times 1000 = \text{Rs. } 5000$$



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41. If a packet of 10 glasses is thrown, then which of the following cannot be the ratio of broke glass and unbreak glass.

- (A) 8 : 2
- (B) 5 : 4
- (C) 1 : 1
- (D) 2 : 3

- A. (D)
- B. (C)
- C. (B)
- D. (A)

Ans. C

Sol.

Let take ratio of broken to unbroken glasses is m: n, then $(m+n) \times p$ must be equal to 10, where p is a positive integer, this implies that $(m+n)$ must be factor of 10.

Now we see from the options that only $(5+4)$ is not a factor of 10.

Hence the correct answer is option C.

42. One fourth of $\frac{1}{7}$ part of a land is sold

in ` 30000. Find the price of $\frac{8}{35}$ part of

that land.

- (A) 192000
- (B) 212000
- (C) 36404
- (D) 152000

- A. (C)
- B. (B)
- C. (A)
- D. (D)

Ans. C

Sol.

Price of one fourth of $\frac{1}{7}$ part of the land=

Rs. 30000

$$\text{Land Price} \times \frac{1}{4} \times \frac{1}{7} = 30000$$

So

$$\text{Land Price} = 7 \times 4 \times 30000 = \text{Rs.}840000$$

Therefore

$$\text{Price of } \frac{8}{35} \text{ part of that land} = \frac{8}{35} \times 840000 = \text{Rs.}1$$

43. Divide Rs. 368 in the ratio 1 : 5 : 8 : 9. The rupees in the respective ratios are given by

- (A) 16, 80, 127 and 145

- (B) 16, 80, 129 and 143
- (C) 16, 80, 128 and 144
- (D) 16, 80, 128 and 143

- A. (D)
- B. (C)
- C. (A)
- D. (B)

Ans. B

Sol.

Let the four divisions be x , 5x , 8x and 9x

$$\text{Total sum} = x + 5x + 8x + 9x = 23x = 368$$

$$23x = 368$$

$$x = 16$$

Therefore, the four parts will be Rs. 16 , Rs. 80 , Rs. 128, Rs. 144

44. Divide Rs. 126 in the ratio 1 : 5 : 6 : 9. The rupees in the respective ratios are given by :

- (A) 6, 30, 35 and 55
- (B) 6, 30, 37 and 53
- (C) 6, 30, 36 and 54
- (D) 6, 31, 35 and 54

- A. (D)
- B. (C)
- C. (A)
- D. (B)

Ans. B

Sol.

We have to divide 126 in ratio 1:5:6:9

$$\text{Sum of ratio} = 1+5+6+9=21$$

Now respective ratios

$$\frac{1}{21} \times 126 : \frac{5}{21} \times 126 : \frac{6}{21} \times 126 : \frac{9}{21} \times 126 = 6:30:36:54$$

45. The ratio of two numbers is 3 : 1 and their sum is 72. Find the difference between the numbers

- (A) 24
- (B) 36
- (C) 32
- (D) 28

- A. (A)
- B. (D)
- C. (C)
- D. (B)

Ans. D

Sol.

Let the numbers be 3x and x respectively According to question,



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$3x + x = 72$
 $x = 18$
 So the difference between numbers = $3x - x = 2x = 36$

46. Find the fourth proportional to 3.6, 6.9 and 11.4
 (A) 20.3
 (B) 18.9
 (C) 19.6
 (D) 21.9
 A. (D)
 B. (A)
 C. (B)
 D. (C)

Ans. A
 Sol.

Let the fourth proportional is x

$$\frac{3.6}{6.9} = \frac{11.4}{x}$$

$$x = 21.85$$

assuming the nearest possible answer the answer is option d

47. A father divided his wealth among three sons in the ratio 2 : 3 : 5 after setting aside $\frac{1}{3}$ rd for his wife. If the first son gets Rs. 48,000, what was the father's total wealth?
 (A) Rs. 480,000
 (B) Rs. 240,000
 (C) Rs. 360,000
 (D) Rs. 120,000
 A. (B)
 B. (D)
 C. (C)
 D. (A)

Ans. C
 Sol.

Ratio of wealth divided among sons is 2:3:5

$\frac{1}{3}$ of total wealth is given to his wife so $\frac{2}{3}$ of total wealth will be shared among his sons.

Let wealth divided by his sons 2x, 3x, 5x.
 We are given that $2x=48000$ Rs.
 $x=24000$ Rs.

So wealth divided among sons= $2x+3x+5x=10x=10 \times 24000=240000$ Rs.

$\frac{2}{3}$ of total wealth is= 240000 Rs.

Therefore total
 $\text{wealth} = \frac{3}{2} \times 240000 = 360000 \text{Rs}$

48. Two numbers are in the ratio 2 : 3. If 2 is subtracted from both the numbers the ratio becomes 5 : 8. Find the numbers.
 (A) 12 and 18
 (B) 35 and 56
 (C) 72 and 108
 (D) 20 and 48

A. (C)
 B. (A)
 C. (D)
 D. (B)

Ans. B
 Sol.

Let the number be x and y.

$$x/y = 2/3$$

$$3x=2y \text{ or } 3x-2y=0$$

When 2 is subtracted from both the numbers, ratio becomes 5:8

$$\frac{x-2}{y-2} = \frac{5}{8}$$

$$8x-5y=6$$

From equation $3x-2y=0$ and $8x-5y=6$, we gets $x=12$ and $y=18$

So given numbers will be 12 and 18.

49. Divide 3740 into 3 parts in such a way that half of first, one-third of second and one-sixth of third are equal to each other.
 (A) 700, 1000, 2040
 (B) 340, 1360, 2040
 (C) 680, 1020, 2040
 (D) 500, 1200, 2040

A. (C)
 B. (D)
 C. (A)
 D. (B)

Ans. A
 Sol.

Let the first, second and third part of 3740 is x, y and z respectively.

$$\text{Given that, } x/2 = y/3 = z/6$$

$$\text{So, ratio will be } x : y : z = 2 : 3 : 6$$

$$\text{Sum of ratio} = 2+3+6 = 11 \text{ units}$$

$$11 \text{ units} = 3740$$

$$1 \text{ unit} = 340$$

$$\text{So first part } x = 2 \times 340 = 680$$

$$\text{Second part } y = 3 \times 340 = 1020$$



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And third part $z = 6 \times 340 = 2040$

50. A total of 90 coins consists of some paisa coins and 10 paisa coins. The total of these coins amounts to 7 Rs. Calculate the number of 5 paisa coins amongst them

- (A) 50
- (B) 45
- (C) 40
- (D) 35
- A. (A)
- B. (C)
- C. (B)
- D. (D)

Ans. B

Sol.

Let 5 paisa and 10 paisa coins are x and y respectively.

Given

$$x+y = 90 \text{ coins.....(1)}$$

and

$$5x+ 10y = 700 \text{ Paisa.....(2)}$$

By solving equation (1) and (2)

$$x= 40 \text{ and } y = 50$$

so number of 5 paisa coins are $x = 40$ coins.

51. If three numbers are in the ratio of 2 : 3 : 5 and twice the sum of their total is 100 then find the square of the largest between the three numbers.

- (A) 225
- (B) 625
- (C) 25
- (D) 100
- A. (B)
- B. (A)
- C. (C)
- D. (D)

Ans. A

Sol.

Let the numbers are $2x, 3x, 5x$

According to question

$$2(2x+ 3x+ 5x) = 100$$

$$X=5$$

$$\text{Largest number} = 5x = 25$$

$$\text{Square of largest number} = 25 \times 25 = 625$$

52. If three numbers are in the ratio of 4 : 5 : 7 and their total is 320, then find the total of the smallest and the largest number.

- (A) 140

- (B) 220
- (C) 240
- (D) 180

- A. (A)
- B. (B)
- C. (D)
- D. (C)

Ans. B

Sol.

Let the three numbers be $4x, 5x$ and $7x$

$$\text{Sum of three numbers} = 4x + 5x + 7x = 16x = 320$$

$$\text{Therefore, } x = 20$$

$$\text{the total of the smallest and the largest number} = 4x + 7x = 11x = 220$$

53. If $A = 2B = 3C$, then $A : B : C = ?$

- (A) 2 : 3 : 6

- (B) $\frac{1}{3} : \frac{1}{2} : 1$

- (C) 6 : 3 : 2

- (D) 6 : 2 : 3

- A. (B)
- B. (C)
- C. (A)
- D. (D)

Ans. B

Sol.

$$A = 2B = 3C = 6k$$

$$A = 6k, B = 6k/2, C = 6k/3$$

Therefore

$$A:B:C = 6:3:2$$

54. What is the fourth proportion of given data 4, 8, 7, ?

- (A) 6
- (B) 12
- (C) 14
- (D) 16

- A. (C)
- B. (D)
- C. (A)
- D. (B)

Ans. A

Sol.

$$4:8::7:x$$

$$4x = 8 \times 7$$

$$x = 14$$

55. Three flood prone state A, B and C are given economic help of Rs 376 crore in



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ratio of $\frac{1}{3} : \frac{1}{4} : \frac{1}{5}$. What amount will C get?

- (A) Rs. 160 Crore
- (B) Rs. 120 Crore
- (B) Rs. 140 Crore
- (D) Rs. 96 Crore

- A. (D)
- B. (B)
- C. (A)
- D. (C)

Ans. A

Sol.

A:B:C = $(\frac{1}{3}) : (\frac{1}{4}) : (\frac{1}{5}) = 20 : 15 : 12$
 Therefore C will get $\frac{12}{47}$ times of the amount that is 376 crores
 C gets : $\frac{12}{47} \times 376 = 96$ crores

56. If the ratio of two numbers is 7:12 . If 7 is added in both numbers, then ratio becomes 7:11 . Find the smallest number.

- (A) 7
- (B) 28
- (C) 35
- (D) 12

- A. (A)
- B. (D)
- C. (C)
- D. (B)

Ans. D

Sol. Let the fraction be $\frac{7x}{12x}$

$$\frac{(7x + 7)}{(12x + 7)} = \frac{7}{11}$$

$$x = 4$$

the smallest number will be $7x = 28$

57. If $(a + b)^2 = 100$ and $a : b = 1 : 3$, then find the value of ab -

- (A) 10
- (B) 14.50
- (C) 18.75
- (D) 20.50

- A. (C)
- B. (D)
- C. (A)
- D. (B)

Ans. A

$$\text{Sol. } a^2 + b^2 + 2ab = 100$$

Dividing by ab on both the sides

$$\frac{a}{b} + \frac{b}{a} + 2 = \frac{100}{ab}$$

$$\frac{1}{3} + 3 + 2 = \frac{100}{ab}$$

$$ab = \frac{300}{16} = 18.75$$

58. 10 Dozen apples, 15 dozen mangoes and 20 dozen oranges are kept for sale, $\frac{1}{2}$ nd $\frac{1}{3}$ rd and $\frac{1}{4}$ th of each item respectively have been added. What is the total number of fruits kept for sale now?

- (A) 720
- (B) 600
- (C) 580
- (D) 820

- A. (D)
- B. (B)
- C. (A)
- D. (C)

Ans. C

Sol.

$$10 \text{ dozen} = 10 \times 12 = 120$$

$$15 \text{ dozen} = 15 \times 12 = 180$$

$$20 \text{ dozen} = 20 \times 12 = 240$$

$$(\frac{1}{2}) \times 120 = 60, (\frac{1}{3}) \times 180 = 60,$$

$$(\frac{1}{4}) \times 240 = 60$$

$$\text{Added oranges} = 60 + 60 + 60 = 180$$

$$\text{Adding these to the initial number of oranges} = 540 + 180$$

59. If $3A=2B=C$, then $A:B:C = ?$

- (A) 6 : 2 : 3
- (B) $\frac{1}{3} : \frac{1}{2} : 1$
- (C) 3 : 2 : 1
- (D) 1 : 3 : 2

- A. (B)
- B. (C)
- C. (A)
- D. (D)

Ans. A

Sol. Let $3A=2B=C = k$

$$\text{then } A = \frac{k}{3}$$

$$B = \frac{k}{2}$$

$$C = k$$

$$\text{therefore } 3A:2B:C = \frac{k}{3} : \frac{k}{2} : k = 1/3 : 1/2 : 1$$

60. Three bells ring at the intervals of 15 minutes, 20 minutes and 30 minutes. If they ring at 11:00 an together. At what time will they ring together next time?

- (A) 11 : 30 am
- (B) 12 : 00 pm
- (C) 12 : 30 pm
- (D) 1 : 00 pm

- A. (D)
- B. (A)



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- C. (B)
- D. (C)
- Ans. C

Sol.

LCM of 15 minutes, 20 minutes and 30 minutes = 60 minutes

Hence they will ring together NEXT time at 12:00 PM

61. Which of the following fractions is the highest of all?

(A) $\frac{5}{4}$

(B) $\frac{4}{3}$

(C) $\frac{3}{2}$

(D) $\frac{6}{5}$

- A. (A)
- B. (D)
- C. (C)
- D. (B)

Ans. C

Sol.

$$5/4 = 1.25$$

$$4/3 = 1.33$$

$$3/2 = 1.5$$

$$6/5 = 1.2$$

Clearly $3/2$ is the highest

62. Sum of Salary of A and B is 25,000. They spend 75% of their Salary, their Saving ratio is 14:11. respectively. Find out their salary in rupees?

- (A) 15,000 and 10,000
- (B) 14,000 and 11,000
- (C) 13,000 and 12,000
- (D) 12500 each

- A. (C)
- B. (A)
- C. (B)
- D. (D)

Ans. C

Sol. Since both save 25% of their income.

So, their salaries are in the same ratio as their savings = 14:11

So, salaries are Rs.14000 and Rs.11000.

or

Let the salary of A is Rs x.

Therefore, salary of B is (25000-x).

Since both save 25% of their income.

Therefore, according to question:

$$25\% \text{ of } x : 25\% \text{ of } (25000-x) = 14:11$$

By solving it, we get

$$x = 14000.$$

63. If L:M = 3:5 and M:N = 2:3, then the value of N:L is

- (A) 2:1
- (B) 5:2
- (C) 3:2
- (D) 1:2

- A. (B)
- B. (A)
- C. (C)
- D. (D)

Ans. A

$$\text{Sol. } L/M = 3/5$$

$$M/N = 2/3$$

Multiplying both we get;

$$L/N = 2/5$$

$$N/L = 5/2$$

64. Three categories of employees get wages in the ratio of 1 : 2 : 3. If they get increments of 5%, 10% and 15% respectively, what will be the new ratio of their wages?

- A. 21 : 44 : 69
- B. 7 : 22 : 23
- C. 7 : 44 : 23
- D. 21 : 22 : 23

Ans. A

Sol. Let wages are 100,200 and 300 rupees respectively

Given,

$$100 \times \frac{105}{100} : 200 \times \frac{110}{100} : 300 \times \frac{115}{100}$$

$$\text{Required ratio} = 105:220:345$$

$$= 21:44:69$$

65. The Central Government granted a certain sum towards flood relief to 3 states A, B and C in the ratio 2 : 3 : 4. If C get Rs. 400 Crores more than A, what is the share of B?

- A. Rs. 400 crore
- B. Rs. 200 crore
- C. Rs. 600 crore
- D. Rs. 300 crore

Ans. C



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Sol. Let certain sum of state A,B and C –
2x,3x and 4x respectively
Given that, $4x - 2x = 400$ crores
 $X = 200$ crores
Share of B = $3x =$
 $3 \times 200 = 600$ crores



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