

Solutions – Difficult Test Set 2

1. (d) : Let 100 units be B's income and X units be B's expenditure A's income = 60 units

$$\text{A's expenditure} = \frac{50X}{100} \text{ units But } 60 = \left(\frac{80}{100}\right) \times X \Rightarrow X = 75$$

$$\text{B's saving} = (100 - 75) \text{ units} = 25 \text{ units}$$

Hence, A's saving =

$$60 - \left(\frac{50}{100}\right) \times 75 \text{ units} = 22.5 \text{ units}$$

$$\Rightarrow \text{A's saving} : \text{B's saving} = 22.5 : 25 = 9 : 10$$

2. (d) : Let daily wages of A, B and C be $4d$, $3d$ and $2d$ respectively.
Total wages = $(8 \times 4d) + (10 \times 3d) + (15 \times 2d) = 10764$ or $d = 117$.
Now daily wages of each = Rs. 936, 1170, 1755

3. (c) : As per the problem, we have CP of 18 – SP of 18 = CP of 3
CP of 15 = SP of 18

But CP of 15 toffees = Rs. 90

So SP of 18 toffees = Rs. 90

$$\text{SP per toffee} = \frac{90}{18} = \text{Rs. } 5$$

4. (d) : $\frac{T_1 \text{ speed}}{T_2 \text{ speed}} = \sqrt{\frac{\text{Time taken by } T_2 \text{ to reach Chennai}}{\text{Time taken by } T_1 \text{ to reach Yeshvantpur}}}$

$$\text{or } \frac{45}{T_2 \text{ speed}} = \sqrt{\frac{200}{242}} = \frac{10}{11}$$

$$\Rightarrow T_2 \text{ speed} = \frac{99}{2} = 49.5 \text{ km/hr.}$$

5. (d) : Let the number of men be x

$$\frac{4x}{3(95 - x)} = \frac{8}{9}$$

$$9x = 570 - 6x$$

$$x = 38, \text{ so number of men is } 38$$

6. (c) : 32% of CP = Rs. 8320 or CP = Rs. 26000

Now the Aman wants a profit of 62%.

Therefore, he has to sell it at a price of $26000 \times 1.62 = 42120$

7. (c) : L.C.M. of 5, 6, 7, 8

$$= 35 \times 24 = 840$$

Therefore, the required number = $840x + 3$,

Which is exactly divisible by 11.

For $x = 2$, it is divisible by 11.

Hence,

$$\text{Required number} = 840x + 3$$

$$= 840 \times 2 + 3$$

$$= 1683$$

8. (d) : If Z earns Rs 100a, X earns 120a & Y earns 160a

$$160a - 100a = 60a = 7980$$

$$a = 133$$

$$X = 120 \times 133 = 15960$$

$$Y = 160 \times 133 = 21280$$

$$Z = 100 \times 133 = 13300$$

9. (a) : Time taken by two trains will be 9 hours and 6 hours respectively. So, Let the total distance be LCM of (9 and 6) = 18.

Speed of trains will be 2 km/hr & 3 km/hr.

At 9 am distance between two trains is 14 km

$$\text{Time taken} = \frac{14}{(2+3)} = 2 \text{ hours } 48 \text{ minutes}$$

So, trains will meet at 11:48 am.

10. (a) : Weighted means give us

$$\frac{32}{25} + \frac{7}{40} + \frac{1}{4} + \frac{9}{200} \text{ max.} = 63$$

$$\frac{(32+35+50+9)}{200} \text{ max.} = 63$$

$$\text{max} = \frac{63 \times 200}{126}$$

$$= 100$$

11. (b) : Let the total work be 240 units.

Total Work = 240 Units

Pipe 1: 40 hours = 6 units/h

Pipe 1 + Leak: 48 hours = 5 units/h

Leak can empty 1 unit in 1 hour.

Pipe 2 can fill 3 units per hour (half as efficient as the first one)

Therefore, effective filling is 2 units per hour.

Therefore, 120 units (half the tank) will get filled in 60 hours.

12. (b) : $37.5x + 97.5x + 30x = 10230$

$$X = 62$$

$$97.5x = 97.5 \times 62 = 6045 \text{ ml.}$$

13. (b) : It is given that 40 men left after $\frac{1}{4}$ th of the time, that is, after 60 days. After 60 days, the camp had food for 160 men for 180 days.

This amount is to be consumed by 120 men since 40 men left in the camp.

Therefore, $160 \times 180 = 120 \times y$ or $y = 240$ days

But in the question, we have to find the total number of days that the food will last.

Therefore, number of days = $60 + 240 = 300$ days.

14. (c) : Let X = working time

$$\frac{74}{100} \times 5574300$$

Solve to get $X = 6$ hours.

15. (b) : Let the price of $P2$ per kg be Rs. X . Then the price of $P1$ per kg = Rs. $3X$.
1 kg of $P3$ contains

$$\frac{2}{7} \text{ kg of A and } \frac{5}{7} \text{ kg of B}$$

$$\text{Price of 1 kg of } P3 = 3X + \frac{5}{7}X = \frac{26}{7}X$$

By the given condition,

$$\frac{11X}{7} = 10.4 - 1.6 = \text{Rs. } 8.8$$

$$\therefore X = 8.8 \times \frac{7}{11} = 5.6$$

Hence, the price of $P1$ per kg = $3X = 3 \times 5.6 = \text{Rs. } 16.8$
Price of $P2$ per KG = Rs. 5.6

16. (c) : Selling price = Rs. 16.56
Cost price for 38% profit = 1.38 C.P. = 16.56

$$\text{C.P.} = \frac{16.56}{1.38} = \text{Rs. } 12$$

$$\frac{\text{Chemical one}}{\text{Chemical second}} = \frac{(13.5 - 12)}{(12 - 9)}$$

$$= \frac{1.5}{3} = \frac{1}{2}$$

17. (b) : When $T2$ is at 45 points, $T3$ is at 40 points, that is, $T2$ can beat $T3$ by 5 points in a 45 point game. In a 765 point game, $T2$ can beat $T3$ by $\frac{765}{45} \times 5 = 85$ points.

18. (c) : Let the required time be t hours after 9 am. The clock would have lost time = $4t$ min.
Now according to the problem
After 7 hours, clock will lose = $4 \times 7 = 28$ min.

At 4 pm clock will show 3:32 pm and it will lose 2 minutes more till it reaches 4 : 00 pm.

So, actual time will be 4 : 30 pm

19. (a) :

	Initially	After 4 months	After 7 months
X	70	50	66
Y	50	70	70
Z	40	40	24

New rent = 2730 per month. Rs. $2720 \times 12 =$ Rs. 32640 per year

Net for X = $70 \times 4 + 50 \times 3 + 66 \times 5 = 760$

For Y = $50 \times 4 + 70 \times 8 = 760$

For Z = $40 \times 7 + 24 \times 5 = 400$

The shares will 12920, 12920 and 6800.

20. (c) : $6^{12} = 2^{12} \times 3^{12}$. For perfect cubes, power must be multiple of 3.

Therefore, power of 2 equal $2^0, 2^3, 2^6, 2^9, 2^{12}$ and power of 3 equals $3^0, 3^3, 3^6, 3^9, 3^{12}$ So, number of divisors equal $5 \times 5 = 25$.

