

$$1) 1:2 \rightarrow 1:4$$

$$2) A:B+C \quad A+B:C$$

$$1:4 \times 2 \quad 1:1 \times 5$$

$$2:8 \quad 5:5$$

$$\therefore A:B:C$$

$$2:3:5$$

$$3) \frac{3}{2} : \frac{5}{7} : \frac{1}{3}$$

$$63:30:14$$

$$4) 3 \cdot 6 : 1 \cdot 2$$

$$3:1$$

$$5) 2^{2 \cdot 2} : 2^{1 \cdot 2}$$

$$= \frac{2^{2 \cdot 2}}{2^{1 \cdot 2}} = \frac{2^{(2 \cdot 2 - 1 \cdot 2)}}{1} = \frac{2}{1} = 2:1$$

$$6) R \rightarrow 0$$

$$7) 1 \times 2 \times 3 \times \dots \times 125$$

$$= 1^{125} \times 2^{124} \times 3^{123} \times \dots \times 125^1$$

$$= (121 + 116 + \dots + 1) + (101 + 76 + \dots + 1)$$

$$+ 1$$

$$= 61 \times 25 + 51 \times 5 + 1$$

$$= 1525 + 255 + 1 = 1781$$

$$8) F+S = 42 \text{ yr.}$$

$$F:S$$

$$5:2 \rightarrow 7 \text{ wt} = 42$$

$$\swarrow \quad \quad \quad 1 \text{ wt} = 6$$

$$30 \text{ yr.}$$

$$9) 11 \leftarrow T \rightarrow 10 \text{ h} \quad (110)$$

$$10 \leftarrow T+L \rightarrow 11 \text{ h}$$

$$L \leftarrow L$$

$$\therefore L = \frac{110}{1} = 110 \text{ h}$$

$$10) 3 \leftarrow A \rightarrow 4 \text{ d}$$

$$4 \leftarrow B \rightarrow 3 \text{ d} \quad (12)$$

$$2 \leftarrow C \rightarrow 6 \text{ d}$$

$$A+B+C = \frac{12}{9} = \frac{4}{3} = 1\frac{1}{3} \text{ days}$$

$$11) x+y+z = 120$$

$$x = y+20 \Rightarrow y = x-20$$

$$x = z-20 \Rightarrow z = x+20$$

$$\therefore x+y+z = 120$$

$$x+x-20+x+20 = 120$$

$$3x = 120$$

$$x = 40$$

$$\therefore y = 40-20 = 20$$

$$12) 1:14$$

$$13) A : B : C$$

$$1 : 3 : 4$$

$$1 \times 105 : 3 \times 120 : 4 \times 125$$

$$21 : 72 : 100$$

$$14) D \rightarrow 50 : 25 : 10$$

$$N \rightarrow 1 : 2 : 3$$

$$\frac{D}{N} \rightarrow 50 : 50 : 30 \rightarrow 130 \text{ wt} = 6.50$$

$$130 \text{ wt} = 650$$

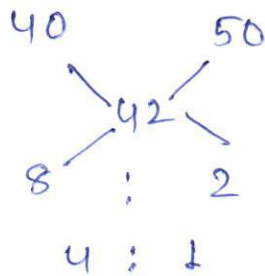
$$1 \text{ wt} = 5$$

$$\therefore \text{No. of 50 paise coin} = 1 \text{ wt} = 5$$

15) D

$$16) \frac{5148}{9} = 572$$

17)



18)

	A	B
	20,000	10,000
C →	2	1
T →	5	10
P →	10	10
	1	1

19) A : B : C

S → 5 : 4 : 3

T → 12 : 15 : 20

20) F : S

$$5 : 3 \rightarrow 8 \text{ wt} = 72$$

$$\downarrow \quad \downarrow$$

$$4 \text{ yr.} : 27 \text{ yr.} \quad 1 \text{ wt} = 9$$

18 yr lat → 63 : 45

7 : 5

21) C.N.D.

22)  $2 \in T_1 \rightarrow 5 \text{ h}$

$-1 \in T_2 \rightarrow 10 \text{ h}$

$$T_1 + T_2 = \frac{10}{1} =$$

$$= 10 \text{ hr.}$$

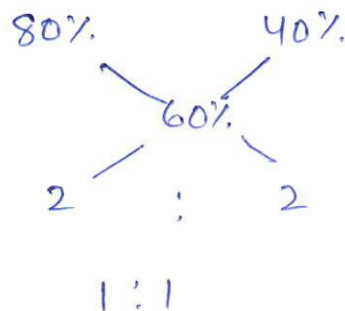
23)  $3 \leftarrow A \rightarrow 40 \text{ d}$

$2 \leftarrow B \rightarrow 60 \text{ d}$

(120)

$$\therefore A+B = \frac{120}{5} = 24 \text{ d}$$

24)



25)

$$\frac{9 - \sqrt{0.09}}{9 + \sqrt{0.09}} = \frac{9 - 0.3}{9 + 0.3}$$

$$= \frac{8.7}{9.3} = \frac{29}{31}$$

26)  $(6x - 1) - (8x - 5) = 7$

$$6x - 1 - 8x + 5 = 7$$

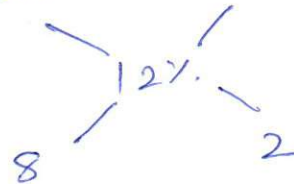
$$-2x = 3$$

$$x = -\frac{3}{2}$$

27)

20,000 ← 10%

20%



20,000 ← 4 : 1 → 5000

$$\therefore \text{Total} = 20000 + 5000 = 25000$$

28) Milk =  $100 \left(1 - \frac{10}{100}\right)^2 = 100 \times \left(\frac{9}{10}\right)^2$

$$= 100 \times \frac{81}{100} = 81 \text{ lit}$$

$$29) 99 + \frac{500 - 189}{3}$$

$$= 99 + 103 \xrightarrow{R} 2$$

$$= 20220$$

$$\therefore \text{last digit} = 0$$

$$30) T.V : R : F$$

$$C.P \rightarrow 3 : 4 : 5$$

$$\%P \rightarrow 30\% : 40\% : 50\%$$

$$\therefore P \rightarrow 3 \times 30 : 4 \times 40 : 5 \times 50$$

$$9 : 16 : 25$$

$$31) 3^{35} \times 6^{36} \times 7^{37}$$

$$= 3^3 \times 6 \times 7^7$$

$$= 7 \times 6 \times 7 \therefore \text{unit place} = 4$$

$$32) F.P = \frac{18 \times 7}{9} = 14$$

$$33) F : S$$

$$P \rightarrow 3 : 1$$

$$+10( \quad ) + 10$$

$$10 \text{ yr. let} \rightarrow 2 : 1$$

$$1 \text{ wt} = 10 \text{ yr.}$$

$$3 \text{ wt} = 30 \text{ yr.}$$

$$34) D$$

$$35) 4 \in A \rightarrow 15d$$

$$6 \in B \rightarrow 10d \quad (60)$$

$$-5 \in C \rightarrow 12d$$

$$A+B+C = \frac{60}{5} = 12 \text{ days}$$

$$36) I : II : III$$

$$2 : 3 : 5$$

$$4 : 5 : 7$$

$$2 \text{ wt} = 20$$

$$10 \text{ wt} = 100$$

$$37)$$

$$81 \left(1 - \frac{1}{3}\right)^2 = 81 \times \left(\frac{2}{3}\right)^2$$

$$= 81 \times \frac{4}{9} = 36 \text{ Lit mil}$$

$$\therefore M : W \quad \left. \begin{array}{l} \text{or} \\ \left(\frac{2}{3}\right)^2 = \frac{4}{9} \end{array} \right\}$$

$$36 : 45$$

$$4 : 5 \quad \therefore M : W$$

$$38)$$

$$\text{LCM of } 8, 12 \text{ \& } 16 = 48$$

$$\therefore \text{Res. No} = 48x + 3$$

$$\frac{48x + 3}{7} = 6x + 3$$

$$x = 3$$

$$\therefore \text{Res. No} = 48 \times 3 + 3 = 147$$

$$39) 1^3 + 2^3 + \dots + 10^3 = 3025$$

$$2^3 + 4^3 + \dots + 20^3$$

$$= 2^3 \times 1^3 + 2^3 \times 2^3 + \dots + 2^3 \times 10^3$$

$$= 2^3 (1^3 + 2^3 + \dots + 10^3)$$

$$= 8 \times 3025 = 24200$$

$$40) 9(x-y) \text{ is perfect sq.}$$

$$\therefore x-y = 9$$

$$\therefore 19-18 = 1 \text{ Number.}$$