Simplification

$5\sqrt{5} \times 625 \times \sqrt[4]{5} = 5^{n + \frac{1}{5}}$

$\sqrt{x} = x^{1/2}$, $\sqrt[3]{x} = x^{1/3}$, $\sqrt[4]{x} = x^{1/4}$

So, $5\sqrt{5} = 5^{1/2}$

$5(5)^{1/2} \times 5^4 \times (5)^{\frac{1}{4}} = 5^{n + 1/5}$

$a^2 \times a^3 = a^{2+3}$

$5^{1 + \frac{1}{2} + 4 + \frac{1}{4}} = 5^{n + \frac{1}{5}}$

$1 + \frac{1}{2} + 4 + \frac{1}{4} = n + \frac{1}{5}$

$\frac{4 + 2 + 16 + 1}{4} = n + \frac{1}{5}$

$\frac{23}{4} = n + \frac{1}{5}$ $n = \frac{23}{4} - \frac{1}{5}$

$n = \frac{1154 - 4}{20}$

$= \frac{111}{20}$

$= 5\frac{11}{20}$

What is the value of x if.

$x = 43 \times 18 - 6 \times 18 + \frac{3}{5}$ of $\left[125\% \text{ of } 80\% \text{ of } (0.\bar{6} + 1\frac{1}{3}) + \sqrt{\left(\frac{8}{27}\right)^{4/3} \times 9}\right]$

$= 666$

$= 774 - 108 + \frac{3}{5}$ of $[\ldots]$

$= 666 + \frac{3}{5}$ of $[\ldots]$

$\frac{3}{5}$ of $\left[\frac{125}{100} \times \frac{80}{100} \text{ of } \left(\frac{6}{9} + \frac{4}{3}\right) + \sqrt{\left(\frac{2}{3}\right)^{3 \times 4/3} \times 9}\right]$

$\frac{6}{3} = 2$

$= \frac{3}{5}\left[2 + \sqrt{\left(\frac{2}{3}\right)^{3 \times 4/3} \times 9}\right]$

$\sqrt{(2/3)^4 \times 9} = \left(\frac{2}{3}\right)^2 \times 3$

$\sqrt{(2/3)^4 \times 9} = \left(\frac{2}{3}\right)^2 \times 3$

$= \frac{4}{9} \times 3$

$= \frac{3}{5}$ of $\left[2 + \frac{4}{9} \times 3\right]$

$= \frac{3}{5}\left[\frac{6 + 4}{3}\right]$

$= \frac{3}{5}\left[\frac{10}{3}\right]$

$666 + 2$

$= 668$

330	647	818
-15	-17	-19
315	630	810

$\frac{315}{45}$ $\frac{180}{45}$ $\therefore 45$

$A = 100$ $B = 180$

A $\frac{80}{180} \times 100$

$= \frac{400}{9} = 44.44$

$\frac{\frac{1}{35}}{\frac{2}{7}} \times 100$ $\frac{1}{35} \times \frac{7}{2} \times 100$

$\frac{1}{10} \times 100$

$= 10\%$

$40\% \to$

$60\% \to 420$

$100\% \to 700$

700
-420
280
420
700

$x + y + \frac{xy}{100}$

$40 + 30 + \frac{40 \times 30}{100}$

$70 + 12$

$= 82\%$

$75\% \to \frac{3}{4}$

$12\frac{1}{2}\% \quad \frac{25}{2 \times 100} = \frac{1}{8}$

$\frac{7}{8} \times \frac{1}{4} = 630$

90

MP = $90 \times 8 \times 4$

2880

$x + y + \frac{xy}{100}$

$(20) + (-20) + \frac{20 \times (-20)}{100}$

$= -4 = 4\%$ decreased

CP = 650

MP SP CP

-22% 780 $\xleftarrow{20\%}$ 650

$\frac{650 \times 20}{100} = 130$

650
130
780

$\frac{1000 \times 22}{100} = 220$

780
+220
1000

CP = x

$20(x - 330) = (384 - x) \times 25$

$4x - 1320 = 1920 - 5x$

$9x = 1920$
1320
3240

$x = \frac{3240}{9}$ 27

$= 360$

CP = 360
SP = 390) 30

$= \frac{30}{360} \times \frac{100}{3}$ $8\frac{1}{3}$

CP = x

$20 \times (x - 330) = (384 - x) 25$

$4x - 1320 = 1920 - 5x$

$9x = 3240$

$x = 360$

390) 30
360

$\frac{30}{360} \times 100$

$\frac{25}{3}$ $8\frac{1}{3}\%$

A : B is 2 : 3

$20,000 \times \frac{36}{6}$ $10,000 \times \frac{30}{5}$

12 : 5

$D = S \times t$

$S \times t$ $t \propto \frac{1}{S}$

$S = 3 : 4 : 5$ $t = \frac{1}{3} : \frac{1}{4} : \frac{1}{5}$

$\frac{60}{3} : \frac{60}{4} : \frac{60}{5}$

$20 : 15 : 12$

4×330
1320

$A : B = 7 : 5$

$B : C = 9 : 11$

$A : B : C$ $63 : 45 : 55$

If $3A = 4B = 5C$ $A : B : C = 20 : 15 : 12$

$a : b = 2 : 3$ $b : c = 9 : 8$ $c : d = 4 : 3$

$a : b = 6 : 9$ $a : b : c : d$

$b : c = 9 : 8$ $6 : 9 : 8 : 6$

$c : d = 8 : 6$

$6 : 9 : 8 : 6$ 12×18

$d = \frac{bc}{a}$ 8 12 18

$\frac{12 \times 18}{8} = \frac{27}{2}$

$\frac{5 \times 15}{75}$

$c = \frac{b^2}{a} = \frac{36}{36} = 1$

0.16 0.04

$\sqrt{ab} = \sqrt{0.16}$

$a : b = 2 : 3$

$b : c = 5 : 8$ sum of 3

$a : b : c = 10 : 15 : 24 = 98$

$49P$

$49P = 98$

$1P = 2$

$\frac{4}{15} A = \frac{2}{5} B$ $1P =$

$\frac{A}{B} = \frac{30}{}$ $5P = 12$ lors

$B = 2 \times 242$
$= 484$

$\frac{1}{2} : \frac{2}{3} : \frac{3}{4} = 12$

$\left(\frac{1}{2} : \frac{2}{3} : \frac{3}{4}\right) \times 12$

$= \frac{1}{2} \times 12 : \frac{2}{3} \times 12 : \frac{3}{4} \times 12$

$= 6 : 8 : 9$ $6 + 8 + 9 = 23$

$23P = 782$

$1P = 34$

$34 \times 6 = 204$

$\frac{782}{23}$

M P B

$500 : 700 : 800$

40% $+200$ $+350$ 50% $+600$ 75%

$700 : 1050 : 1400$

10 15 20

$2 : 3 : 4$

$2 : 3$ $4 : 6$

$3 (5 : 7)$ $P (5 : 7)$ $1P + 4$

$4P = 4 \times 4 = 16$

$2x$ $3x$

$2x + 4$ $3x + 4$

$\frac{2x + 4}{3x + 4} = \frac{5}{7}$

$15x - 14x = 1x$

$20 - 28 = 8$

$x = 8$

$2(8) = 16$

$4\left(\begin{matrix} 7 : 13 \\ 11 : 17 \end{matrix}\right)4$

$4P = 24$ $\boxed{P = 6}$

$13 - 7 = 6$

$6P = 6 \times 6$
$\boxed{= 36}$

$A = \frac{1}{13}$

$A_5 = \frac{5}{13}] 8 = \frac{8}{15}$

3 → wdone → 12 days

5 → T.w

$3 \times 4 \xrightarrow{1d} 12$

Total work i'n 5 units

$4 \times 5 = \boxed{20\text{ Days}}$

$\frac{3}{5} \times 100 \rightarrow 60\%$

60% → 12 days

100% =

25% → 12 d
×4
100% → 48 d

$A \rightarrow \frac{1}{10}$ $B \rightarrow \frac{1}{15}$

w.c 3 2

T.w = 30 units

$(A+B)_T = \frac{T.w}{w.c} = \frac{30}{5}$

$\boxed{= 6}$

$A \rightarrow \frac{1}{10}$ $B \rightarrow \frac{1}{20}$ $C \rightarrow \frac{1}{30}$

A B C
10 20 30
6 3 2
(T.w = 60)

$(A+B+C)_{Time} = \frac{T.w}{w.c}$
$= \frac{60}{11} = 5\frac{5}{11}$

$\frac{A+B}{12}$ $\frac{B+C}{15}$ $\frac{CA}{20}$

w.c 5 4 3

(T.w = 60)

$(A+B+C)_T = \frac{T.w}{w.c} = \frac{60}{12} =$

all A, B, C are repeated in 2 times so,

$2A + 2B + 2C = 5 + 4 + 3 = 12$

$2(A+B+C) = \frac{12}{2}$

$A+B+C = 6$

$= \frac{60}{6}$ $\boxed{= 10\text{ days}}$

$A \rightarrow \frac{1}{20}$, $B \rightarrow \frac{1}{12}$

A B
20 12
3 5 × 9 → 45

(T.w = 60)
$- 45$
15

$A_{Rw} = \frac{15}{3}$

A/25 B/20

4 \/ 5

(T.W=100)
-40
60

40 units

$\frac{A+B}{R.W} = \frac{T.W}{W.E} = \frac{606}{9} = 6\frac{6}{9} = 6\frac{2}{3}$

18
18
36

A/14 B/21

3 \/ 2

(T.W = 42)

$14 \times 3 = 42$

A/45 B/40

$9 \times 23 \longrightarrow 207$ 4d

T.W = 360
207
153 = 9d
17

B = 9+23
= 32 days

20 → 1.5Kg = 30
80 - 30 = 50

BODMAS

$\frac{4 \times 2750}{11000}$ (10/15 * 6)

$[22/2/5 \text{ of } (64-16)+2] - 2/5$

$4\left[\frac{22}{2} \times \frac{5}{2} \text{ of } (50\right] - \frac{2}{5}$

64
16
48

$4\,[55 \times 50] - \frac{2}{5}$

$4\,[2750] - \frac{2}{5}$

55×50
00
275 2750

74 ↑ 97: 10
X 6M

3000 6%

$\frac{1.59 \times 1.59}{9.481}$ 81
.295 45

146

2 | 180, 432
2 | 90, 216
45, 21

$25\%^{A} = \frac{3}{5}B$

$A\,\frac{1}{4} = \frac{3}{5}B$

$\frac{A}{B} = \frac{12}{5}$ $\frac{2}{1}$

6M
5WM
5

2x + 3y = 21
2x - 2y = 4
-5y = 25
y = 5

5)11(2.2
10
10

2,000
1100 - 2/5

$\frac{5500 - 2}{5}$ $\frac{5598}{5}$

A B 23
130% 100

T.w / Eff

(A+B)_T = 130 × 23 / 230 = 13d

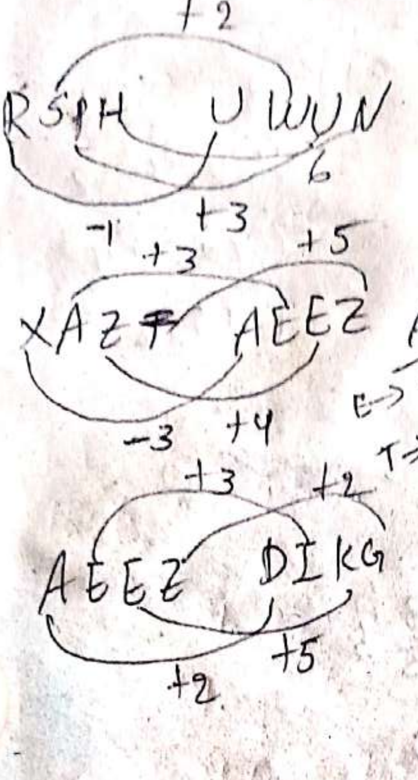
B = 9 + 23 = 32 days

A / 45 B / 40

9 × 23d 207

(T.w = 360)
207
153

(A+B)_T = 153 / 17 = 9



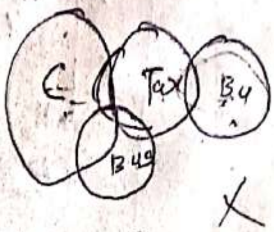
P+Q , P father Q
P−Q , P wife Q
P×Q P Daught Q
P/Q P bro Q

A / 3 B / 1
E → 3 : 1
T → 1 : 3

Time diff 2P

purple F × G − H + J / K
wife father bro

2P = 60
1P = 30



C×I'c
↓
white

PQ 4 km R / 3 Q R / 3

T → 1 : 3
30% 90%

P → white

(A+B) = Product / Sum = 30 × 90 / 120 = 45 / 2

45 × 4 / 180

Q S U T/2T W

33 1/3 % = 1/3

1/3 = 5d
T.w = 15d

C / 12 D / 15

E → 5 × 4 → 20 units
(60)
4 × 10 / 40
−20 / 40

22.5

PRw = 40 / 4 = 10

A / 100% B / 160%

A / 112 B

B_T = T.w / Eff = 100 × 5 / 160 × 8 = 15 / 2 = 7d

$\frac{A}{2} : \frac{B}{1}$ $\quad \frac{A+B}{16}$

$T.W = W.C \times T$ 10

$= 3 \times 16$

45, 40 $= 48d$

$A_T = \frac{TW}{W.C} = \frac{48}{2} = \boxed{24d}$

$\frac{A}{6} \quad \frac{B}{12}$

2 1

(T.W = 12)

A → 1^{d} → 2u

B → 2^{day} → 1 unit

A → 3^{rd} → 2 unit

B → 4^{th} → 1 unit ×

shortcut

In 2 days (A+B) = $\frac{12}{3}$ 4 × 2 = 8

$\frac{A}{24} \quad \frac{B}{36}$ $\quad$ 60% — 510

E → 3 2 $\quad$ 10% — 85

(T.W = 72)

In 2 days $(B+A) = \frac{72}{3+2}$

$= \frac{72}{5} = 14.4$

= 28 da

$M_1 D_1 H_1 = M_2 D_2 H_2$

$45 \times 12 \times 12 = 60 \times D_2 \times 10$

$\frac{108}{10} = D_2$ $\quad \boxed{D_2 = 10.8}$

90

60% — 100% × $\frac{2}{5}$

100% — 40 — 40

$M_1 W \times D_1 = M_2 W_2 \times D_2$

$\frac{18 \times 1400 \times 42}{140} = \frac{30 \times 1000 \times D_2}{100}$

$D_2 = 18$

---

40 $\quad D_1 \quad M_2 \quad D_2$

$x \times 10 = (x+10) \times 8$

$10x = 8x + 80$

$10x - 8x = 80$

$2x = 80$

$\boxed{x = 40}$

$\frac{1}{4} + \frac{1}{40}$

$\frac{10+1}{40} = \frac{11}{40}$

37

$\frac{29}{40}$ 12.5

2.5 23 $\frac{1}{8}$

$\frac{2.5}{100}$ $\frac{2}{8}$ $= \frac{11}{8}$ ×3

29P = 8 $\frac{3}{8}$

$\boxed{1P = 3}$ $40 + 3 = \boxed{120}$ 33 $\quad$ 8P = 8×3 $\boxed{24}$

$12.5 \times \frac{1}{100}$ $\quad$ 11P = 33

$\frac{12.5}{100} = \frac{1}{8}$ $\quad$ 1P = 3

$\frac{2}{8} + \frac{1}{8} = \frac{3}{8}$

$12.5 \times \frac{1}{100}$ $\quad \frac{3}{8} = \frac{11}{8}$ → 1 km, → 20% 19

$\frac{12.5}{1008}$

$\frac{11}{8}$ → 33

11P = 33 $\quad$ 1P = 3

$\boxed{8P = 24}$

25 + 2.5

$\frac{1}{4}$

I.V

7000 7700

$\frac{700}{7000} \times 100$

$\frac{700}{7000} \times 100$ 10%

I.V

19000 17000

2000

$\frac{2000}{19000} \times 100$

10 $\frac{10}{19}$%

12% of 75%

$12 \times \frac{3}{4}$ $5 \times \frac{1}{100} = \frac{5}{100}$

9% – 5%

4% = 75

100% = 1875

$75 \times 25 = 1875$

30% A + 40% B = 80% B

30% A = 80% B – 40% B

30% A = 40% B

$\frac{A}{B} \times 100 = \frac{3}{4} \times 100$

= 75%

$\frac{1350}{45}$

40% – 40 = 40 40% = 80

100% = ? 100% = 200

40% = 40+40

I S E

100 20% 20rs 80rs

↓10% ↑2

110rs 20% 22rs 88rs

$\frac{2}{20} \times 100$ = 10%

I S E

100 20% 20rs 80

↑30% 30

130 20rs 110

$\frac{30}{80} \times 100$

11 – 88

12 – 96

37.5%

R S

125rs 100rs

25

$\frac{25}{125} \times 100$ = 20%

I E S

13500 9000 4500

2700 +20% +1350 15%

16200 10,350 5850

$13500 \times \frac{20}{100}$

$\frac{1350}{4500} \times 100$

$13500 \times \frac{20}{100}$

3%

16200

10,350

5850

5850

4500

1350

13%.

$x \times \frac{87}{100} \times \frac{25}{100} = 26$

100%.
-13%.
87%.

$\frac{x}{400} = 3$

$x = 1200$

$\frac{328}{640+360} \times 100$

$\frac{328}{1000} \times 100$

32.8%.

$\frac{640}{360}$ 1000

850 = 100%.
44% (M)
28% (H)
10% (SIK) } 82%

18% → other comm

100% → 850

18% → 153

$\frac{18}{850} \times 100$

10% ⇒ 200

2500 = 100%.
60% → (Sh) 100%.
30% → (SB)
32 → (PS)

38% → shares

$2500 \times \frac{60}{100} \times \frac{38}{100}$

100
- 60%
15 × 38 = 570

640 - b 100%.
40% ↓
256

360 - g 100%.
20% ↓
729

256 + 72

100% — 20 — 80 + 16 · 96
↓ 20%. ↓ 20%.

$\frac{4}{100} \times 100$ 4%.

Max = 100%.
35% = 700%.
100% 2000

30% →

$30\%x + 15 = 40\%x - 35$

$10\%x = 50$

$\frac{10}{100} x = 50$

$\frac{x}{10} = 50$

$x = 500$ → Total marks

x = 500
↓ 30%.
150 + 15
= 165
for pass

$\frac{165}{500} \times 100$ = 33%.

80% → 16000
100% → 20000

A

I S E
10000s 20% 2000 16000
20000

80 → 16000

2000

$\frac{20000}{16000} \times 100$

$20 \times \frac{1}{4}$

100% → 3000
5% → 156

60% A = 75% B

328

$\frac{60}{100} A = \frac{75}{100} B$

60 A = 75 B

$A = \frac{60}{75} \times 100$

$\frac{60 \times 100}{6000}$

$\frac{6000}{75}$

659.

x × 20% = x/5

144% = 13500 117 → 9000

14%. → 1350
625
725

5760
4500
1260

13,500 − 9000 = 4500

New incom = 15390

New exp = 107% 9000 = 9630

New saving = 15390 − 9630 = 5760

$\frac{1260}{4500} \times 100 = 28\%$

20% X − 20 = x + 20

100
−20
80 ↑20% 96
16

100 − 96 = 4

100%
−20
80% → 100% ↑ 120 →
100 → 80
4

80 ↑20% 96
+16

$\frac{96}{100} \times 100$

$\frac{120}{80} \times 100$

100 − 96 1500

4%

80% → geo
65% → bio
17% → failed

100%

80 + 65 + 17

$x \times \frac{90}{100} \times \frac{90}{100}$

100% − 10 = 90
100 − 10 = 90

100% → (−10) 90% → (−10) 81
4200 9

81 → 32,400

100 → 40000

100% —15%→ 115% —15%→ 127

127 → 3200

100 →

32,000

$\frac{90}{100} \times \frac{90}{100}$

45 45
20 20
25

45 × 45
225
225
2475

100%

80% (Adults)

9 : 7 → 4.2 lakh

+0.6 M W

5.4 lakh

7p = 4.2 lakhs

1p = 0.6 lakh

80% → 9.6 lakh

100% → 12 lakhs

9 : 8 2P = 8000

7 : 6

1P = 4000

9+8 = 17

17P =

17 × 4000

= 68000

$\frac{50 \times 12}{100}$

50

600

62% →

100%

62% 38%

432

62 - 38

38

24

24% → 432

100% →

$\frac{24}{432} \times 100$

M W P

7 : 9

7 : 12

3P = 27

1P = 9

7P = 7×9 = 63 lit

100 (coins & Rings)

60% 40%

60 (coins) 40 (ring)

30% 42 (gold) 40% (16 gold) 24 (silver)

18 (silver)

$\frac{58}{100} \times 100$ = 58%

42

16

58

$\frac{5+125}{2} = \frac{130}{2} = 65$

100% = 500

BM F

10% 15%

+2 -3

12%

3 : 2

×1000

3000

12%

$\frac{600}{5000} \times 100$

5P = 5000

1P = 1000

2 : 1

2×1 : 2

2 : 1

BM Ba

7x : 3x

7x+6 , 3x+6

7x+6+8 3x+6+8

$\frac{7x+14}{3x+14} = \frac{7}{4}$

28x - 28x

7x = 42

x = 6

3x+6

3(6)+6

= 24

14×4

56

7×14

98

98

56

42

2 : 1

21 : 2

2 : 4

3P

3P = 60 lits

1P = 20 lit

3P = 60 lit

17 18 19 | 21 22 23
20

17 : 23

17+23 = 90 (sic)

23-17 = 6   1.03

17×23 = 391   23/17   [1.03]

57 59 | 61 63
60

53 + 44 = 97

57×63 = 3591

-44 → 53 → +44

(9) ... (97)

-22×2   23   22×2

191   192   193

(21)   22/24   (21)   11×30 = 330

191 + 193 = 384   6×34 = 104   48

6×28 = 168   [43]

437   330 + 104 + 168

- - - | 39 41 43 | - - -

6th = 330 + 104 = 434 − 168 = 264

I   II   III

3   6   2 ×3

×21

3+6+2 =   11P = 44×3

6×12 = 72   11P = 132

1P = 12

I   II   III

2 : 10 : 5+8

31×3 = [93]

= 2+10+5 = 17P+8

17P + 8 = 93

17P = 93−8

17P = 85

1P = 85/17   [1P = 5]

2×5 = [10]

25   28   30

11 (Num) → 30
5 (Num) → 25   5×5 = 25
5 (LN) → 28   2×5 = 10

6th = 30+25+10   H−L = 1

[= 65]

40(I) → 50(A)

HL   2(A)

38(I) → 48(A)

H+L = 50+50+(38×2)

= 176

H−L = 172

H+L = 176

CP = 600) 150
SP = 750
150/600 × 100
= 25%

CP = 450 SP = 400
50/450 × 100

3 → 1, 2, 4, 5, 6
1 → 2, 3, 4, 5, 6

1 – 2, 3, 4, 5, 6   1 opposite 6

3 – 1, 2, 3, 4, 5, 6

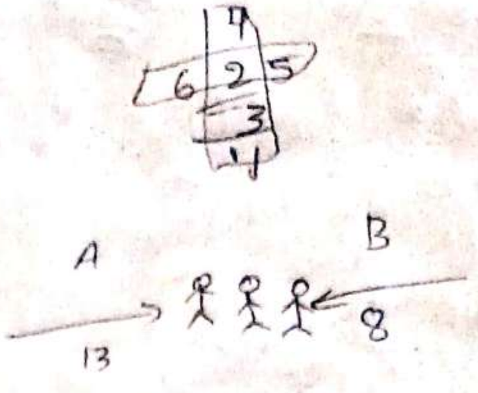
5 – 1, 2, 3, 4, 5, 6
4 – 1, 2, 3, 5, 6.

6 – 1, 2, 3, 4, 5   3

2 oll 5
4 oll 1
and 1 9

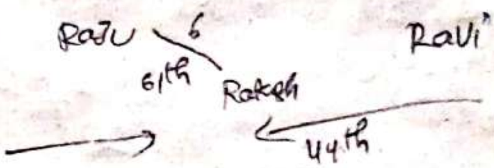
$\frac{1}{a} + \frac{1}{b} = \frac{b+a}{ab}$

17   11 and
11 × 17 " 187



Total = I + II – B/w – 2
= 13 + 8 – 3 – 2
= 21 – 5
= 16

I = 37   II – 18   b/w –
37 + 18 – 5 – 2
55 – 7 = 48



61 + 44 – 6 – 2
= 105 – 8
= 97

L = 4
R = 26
Total 60 – 22 = 38

60 – 22 = 38

4104/171 = 24 × 9 = 216

LCM (9, 24, 36)

182
169
HCF 13

182 - 169 = 13

169, 182 → 13

21, 35 → 14
22, 27 → 5

35, 45, 50 HCF

45 - 35 = 10
50 - 35 = 15
45 - 50 = 5

12, 30, 84 Find HCF

84 - 12 = 72
84 - 30 = 54

12, 30, 84
18/2 = 9
18/3 = 6

150, 210, 300
60, 90
least = 60/2 = 30

6, 12, 24, 48 what LCM?
48

4, 12, 16, 24
48
24×2 = 48

3, 9, 13, 18
36
18×2 = 36

13×18 = 234

2 | 36
2 | 18
3 | 9
3 | 3
1

LCM of 3/4, 6/12, 9/16

LCM = LCM of (num) / HCF of (denom)

LCM = 3, 6, 9 → 18
HCF = 4, 12, 16

18/4 = 9/2

12 = 2×2×3
15 = 5×3
18 = 2×3×3
27 = 3×3×3

2×3×3×2×5×3

540 - 4 = 536

5×6 = 30

56 + 4 + 1
56K + 4K + 1 K = 5
56×5 + 4×5 + 1

= 280 + 20 + 1

(301)

$\frac{2240}{2}$ = 1120

(34 Avg) $\frac{67 \times 2}{134}$

(1) gp → 67×2

(2) gch p → 70

(3) gch → 18

1120
1120
1120
3360

35
35
70

134
170
18
222

1120
1120
2240

$\frac{222}{7}$ $31\frac{5}{7}$

5 → $27^{\times 5}$ = 135

4 → $25^{\times 4}$ = 100

5^{th} 135 - 100 = 35

6 → 6

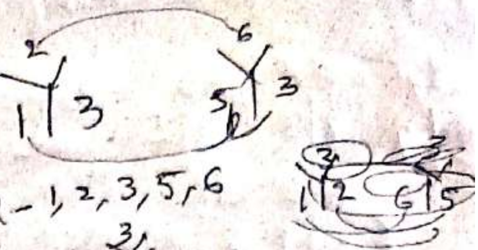
Total target = 7.25×20
= 145

15 over = 6×15 = 90

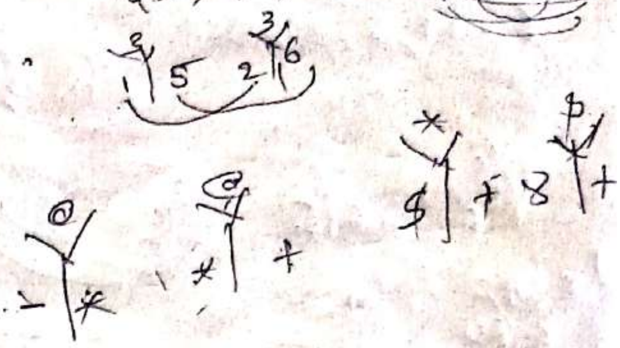
Run required = 145 - 90
= 55

55/55 = 11,

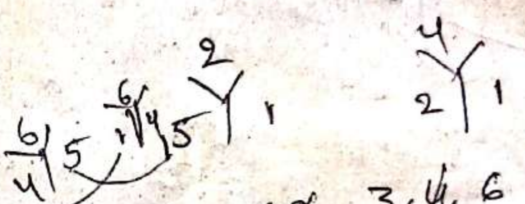
20 → 0×20 = 0



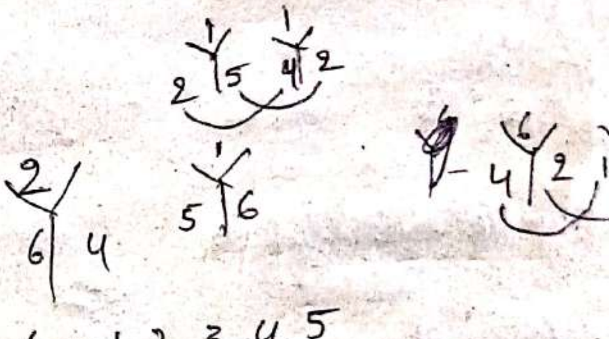
4 - 1, 2, 3, 5, 6



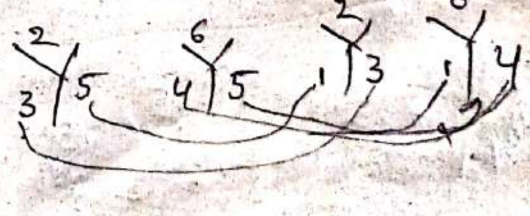
✱ = + @ + $ + 8



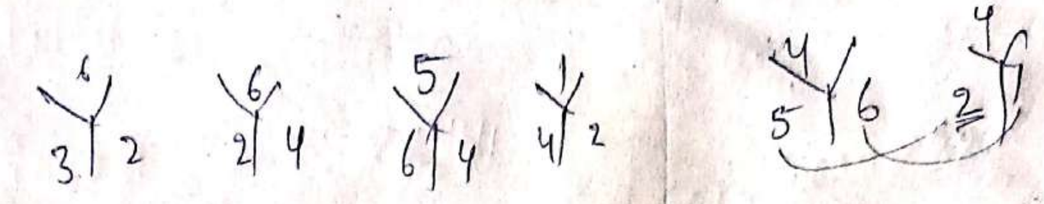
5 → 1, 2, 3, 4, 6



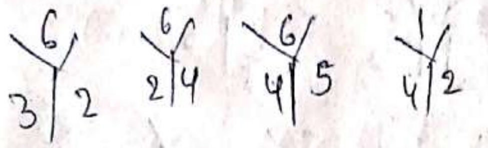
6 - 1, 2, 3, 4, 5



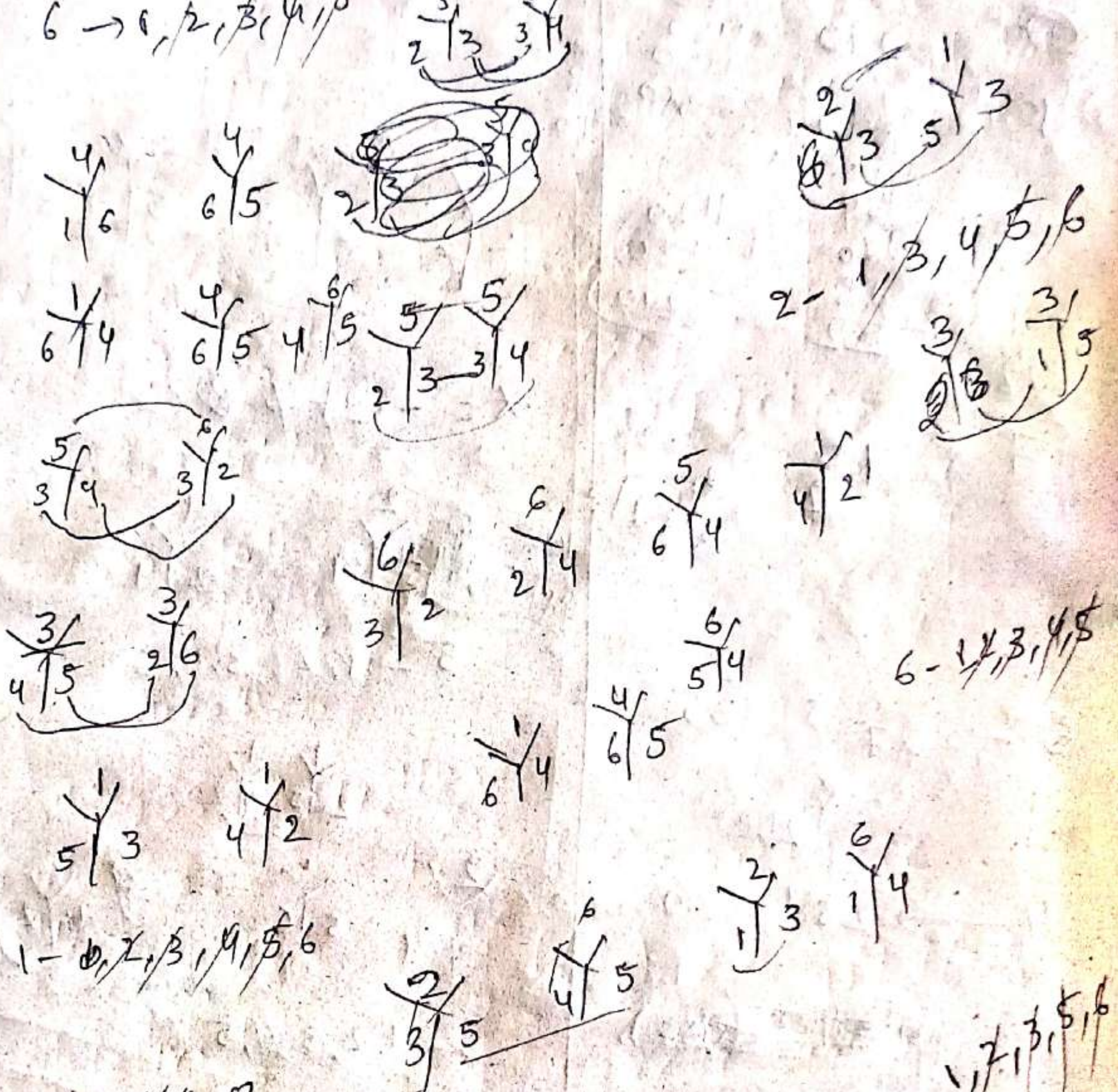
3 → 1
5 → 3
4 → 1
5 → 4



4- 1, 2, 3, 5, 6



6 → 1, 2, 3, 4, 5



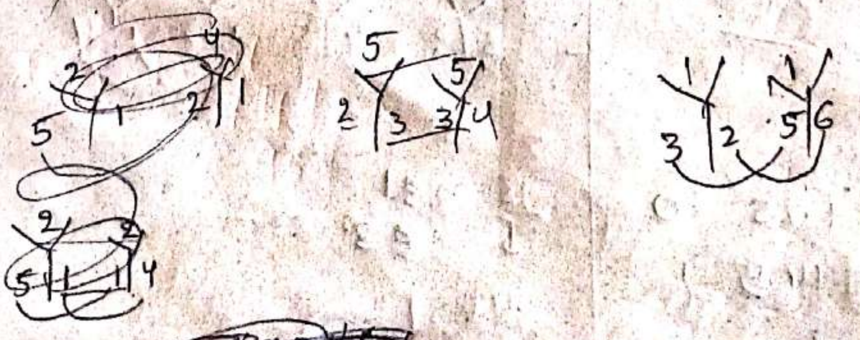
2- 1, 3, 4, 5, 6

6- 1, 2, 3, 4, 5

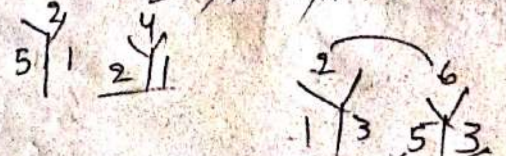
1- 0, 2, 3, 4, 5, 6

4- 1, 2, 3, 5, 6

* @ - 4/5 8



~~2- 1, 2, 3, 4, 5, 6~~



4→ 1, 2, 3, 5, 6

160kmph (50)

70kmph length 72

→ sped same = substract

$d = s \times t$

$(x+72) = (160-70) \times \frac{5}{18} \times 5$

$(x+72) = 90 \times \frac{5}{18} \times 5$

km/hr → $\frac{5}{18}$

mps → $\frac{18}{5}$

$x = 125-72$

$x = 53$

IU - GT
PR - MP
EI - CH
UX - SW

F = 5x
second = x

$x \times 5x = 6845$

$x^2 = 1369$

$\sqrt{1369}$

$x = 37$

$40^2 = 1600$
$35^2 = 1225$
$36^2 = 6x$
$37^2 = 49$

37×37
259
111
1369

sum of this number

$x + 5x = 6x$
$= 6 \times 37$
$= 222$

7620×114

A — B

20kmph s_1 ← 60kmph s_2

speed

$Avg = \frac{2 \times s_1 \times s_2}{s_1 + s_2}$

$= \frac{2 \times 20 \times 60}{20+60}$

$= \frac{120 \times 20}{80}$

= 30kmph

$SP_1 = 7620$, loss = 8%

$SP_2 = ?$ gain = 14%

$SP = CP \times \frac{(100 - loss)}{100}$

$7620 = CP \times \frac{92}{100}$

$CP = \frac{7620 \times 100}{92}$

$SP = CP \times \frac{(100 + \% f}{100}$

$7620 = \frac{7620 \times 100}{92} \times \frac{11}{1}$

944217

$1 \times 6.25 = 0$

$6 - 25 = 0$

$9 = 0$

Shortcut

$7620 : 92 :: x : 114$

$72620 \times 114 = 92 \times x$

$x = \frac{7620 \times 114}{92}$

SI = 9442

$I \times t_1 : I_2 \times t_2 = P_1 : P_2$

$10000 \times 12 : 20,000 \times 12$

$1 : 2 = P_1 : P_2$

$2380 \times \frac{10}{100} = 238$

A = 238

$2380 - 238 = 2142$

2142 < A : B
1 : 2

$A = 2142 \times \frac{1}{3}$

$= 714$

A Net profit

$714 + 238$

= 952

I 12,000 | S 32% | E 68%

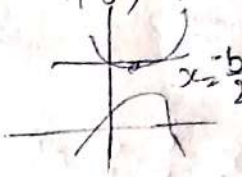
$12,000 \times \frac{32}{100}$

$= 120 \times 32$

$= 3840$

---

if $ax^2 + 7x + c$ is minim at $x = -7/4$ and has a value $-9/8$, find the value of c)



120 × 32
240
360
3840

$ax^2 + 7x + c$ - at $x = -7/4$

$x = -\frac{b}{2a} = \frac{-7}{4}$

$= \frac{-7}{2a} = \frac{-7}{4}$

$2a = 4$

a = 2

$f(x) = ax^2 + 7x + c = -9/8$

$f(-\frac{7}{4}) = 2 \times (-\frac{7}{4})^2 + 7(-\frac{7}{4}) + c =$

$2 \times \frac{49}{168} - \frac{49}{4} + c = \frac{-9}{8}$

$c = \frac{-9}{8} - \frac{49}{8} + \frac{49}{4}$

$= \frac{-9 - 49 + 98}{8}$

$= \frac{-58 + 98}{8} = \frac{40}{8}$

98
58
40

5 | 1 | 2 | 1

$10 \to 40 \times 10 = 400$

$45 \times 10 = 450$

$\frac{400 + 5}{10}$

$= \frac{405}{10} = 40.5$

$\frac{60+60+60}{\frac{60}{10} + \frac{60}{20} + \frac{60}{30}}$

$= \frac{180}{6+3+2}$

$= \frac{180}{11}$

$= 16.36$ kmph

---

surface area of sphere $= 4\pi r^2$

$4\pi (r+16)^2 - 4\pi r^2 = 1408\pi$

$4\pi [(r+16)^2] = 4 \times 352 \times \pi$

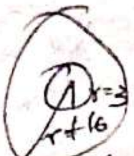
$r^2 + 2 \times r \times 16 + 256 - r^2 = 352$

$r^2 + 32r + 256 - r^2 = 352$

$32r = 352 - 256$

$32r = 96$

$r = 3$



$3 + 16 = 19$

$d = 2 \times r$

$= 2 \times 19 = 38$ CM

$x^2 - (a+3)x + 4 = 0$ x^2 (...)

$x^2 - (a+4)x + 6.25 = 0$ are (...)

then find a.

root of quadratic equation $= b^2 - 4ac = 0$

$x^2 - (a+3)x + 4 = 0$

$(a+3)^2 - 4 \times 1 \times 4 = 0$

$a^2 + 6a + 9 - 16 = 0$

$a^2 + 6a - 7 = 0$

$a^2 + 7a - a - 7$

$a(a+7) - 1(a+7) = 0$

$(a+7)(a-1) = 0$

$a = -7, 1$ ✓

Average speed $= \frac{\text{total distance}}{\text{total time}}$

60 60 60

d d d

10km 20kmph 30kmph speed

$\frac{10+20+30}{\frac{10}{10} + \frac{20}{20} + \frac{30}{30}}$

second equation

$x^2 - (a+4)x + 6.25 = 0$

$(a+4)^2 - 4 \times 1 \times 6.25 = 0$

$a^2 + 8a + 16 - 25 = 0$

$a^2 + 8a - 9 = 0$

$a^2 + 9a - a - 9 = 0$

$a(a+9) - 1(a+9) = 0$

$a = 1, -9$

$a = +1$ becomes $a = 1$ Present in 2 answers of equations

SP = 10620 loss = 10%.

CP = ?

$SP = \frac{CP \times 90}{100}$

$10626 = \frac{CP \times 90}{100}$

$CP = \frac{1062 \times 100}{9}$

$CP = 11800$

CP = 11800

Profit = 12%.

$SP = \frac{11800 \times 112}{100}$

= 13216

118×112

236

118

1416

SP = 10620

loss = 10%.

$SP = CP \times \frac{90}{100}$

$10626 = CP \times \frac{90}{100}$

$CP = \frac{1062 \times 100}{90}$

$CP = 11800$

Profit = 12%

$SP = \frac{CP \times 112}{100}$

$= \frac{11800 \times 112}{100}$

= 13216

Trick

$10626 : 90 :: x : 112$

$\frac{10620}{90} = \frac{x}{112}$

$x = \frac{10626 \times 112}{90}$

= 13216

118×112

236

118

118

13216

I = 18200

E = 89%.

S = 11%.

$\frac{18200 \times 11}{100} = 364$

182

182

364

182×11

182

182

2002

182×11

182

182

2222

3, 8, 15, 24, 35, 48

5 7 9 11 13

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

$\frac{2 \times 14}{10} = \frac{M_2 \times 4}{10}$

7 day

50 km/h

60 km/hr

Avg speed $= \frac{2 S_1 S_2}{S_1 + S_2}$

$= \frac{2 \times 50 \times 60}{50 + 60}$

$= \frac{100 \times 60}{110}$

$= \frac{600}{11}$

$54 \frac{6}{11}$

$M + 30 - 60 = \frac{2M}{5}$

$M - 30 = \frac{2M}{5}$

$M - \frac{2M}{5} = 30$

$\frac{5M - 2M}{5} = 30$

$\frac{3M}{5} = 30$

$M = 50$

$50 + 12 = 62$

$M = \frac{5}{2} x$

for $x = \frac{2M}{5}$

Mode = 3median − 2mean → for

$L = 3N - 2M$ ✓

In a class avg marks of 12 students is 36. If the marks of each stude become double, what will be the av

$12 \rightarrow 36$

double $36 \times 2 = 72$

639 : 1468

−4 −3

635 1465

Paternal uncle father

(+2) A ↓ S (+)

(−) F ↓

(−D) ⟷ (+B)

P_1, P_2

$P_1 + P_2 = x$

$M = 2\frac{1}{2} \quad \frac{4+1}{2} = \frac{5}{2}$

$M = \frac{5}{2} x$ — ①

$M + 30 = x + 60$

$M + 30 - 60 = x$

$b = x$

$l = 4x + 4$

$A = l \times b$

$154 = (4x + 4) \times x$

$4x^2 + 4x - 154 = 0$

$\therefore 2x^2 + 2x - 77 = 0$

l

b = x

$x \times 5x$

$x + 5y = 980$

$5x^2 = 980$ (196)

$x^2 = 196$

$x = \sqrt{196}$

$x = 14$

14, 70

14 + 70 = 84

⇒ 84

SP. 3570 loss = 15%

$SP = CP \times \frac{85}{100}$

$3570 = CP \times \frac{85}{100}$

$CP = \frac{3570 \times 100}{85}$

CP = 4,200

profit = 115%

$SP = 4,200 \times \frac{115}{100}$

SP = 4830

Trick

3570 : 85 : : x : 115

$\frac{3570}{85} = \frac{x}{115}$

$\frac{3570 \times 115}{85} = x$

= 4830

$SI = \frac{PTR}{100}$

$\frac{3560 \times 5 \times 15}{100}$

178 × 15 = 890 + 1780 = 2670

[2670]

Year: 6, 6

12800 —12.5% (1600)— 14400

14400 —12.5% (1800)— 16,200

16,200 − 12800 = 3400

CI = 3400

16200 − 5000 = 11,200

2 : 1

1600, 1600 = 3200; 1800; 50,00

$12800 \times \frac{1}{8}$

12800 + 1600 = 14400

25% → 12.5, 12.5

$12800 \xrightarrow[1600rs]{12.5\% = \frac{1}{8}} 14400$

$14400 \xrightarrow[1800rs]{12.5\% - \frac{1}{8}} 16,200$

Intrest for total

It is done is 2 ways

2 : 1

1600 : 1800

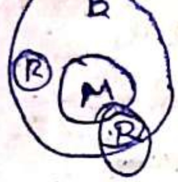
3200 + 1800

= 5000

A : B
3 : 5
1 : 2
A : B
6 : 10

A : B
3 : 5
2 : 4
1 : 1

IP → 46000
SP → 46000 × 5
= 230,000



40 = 50 m
10

$12800 \times \frac{1}{8} = 1600$

$14400 \times \frac{1}{8} = 1800$

$\frac{2 \times S_1 S_2}{S_1 + S_2}$

$\frac{10 \times 40 - 40 + 45}{10}$

$= \frac{400 + 5}{10}$

$= \frac{405}{10} = 40.5$

I = 7450
S = 32%
E = 68%

$7450 \times \frac{68}{100}$

= 5,066

$7450 \times \frac{32}{100}$

7450
2,384
5066

556 − 4 = 552

2028 − 4 = 2024

$10x = 845$

$10x^2 = \frac{845}{10}$

84.5

$x = \sqrt{84.5}$

= 9.19

sucessive discount

$MP \times \frac{(100-12)}{100} \times \frac{(100-8)}{100} = SP$

(12% discount, 8% discount; MP = marked price)

13 15 21 19 5
MOUSE → 11
RATE → 6
NETWORK →

19 15 13 5 19 8
SOMESH → 240123

RAJINI → 798565

MANI → 09695

121

~~6 15~~ ~~11 12~~ RAS

BEC, CID, FOG, KUL, ~~QOR~~

$Q^{(-)} = P^{(+)}$

$R^{(+)} \leftrightarrow T^{(+)}$

B ⟷ A

C ⟷ D

B ⟷ A

32, 34, 43, 71, 136 262

+2 +9 28 65

2^3+1 3^3+1 4^3+1 5^3+1

+136
= 126
262

20, 30, 45, 67.5, 101.25

10 15 22.5 34.75

5 7 12

126
61
187

20 30 45 67.5 101.25 151.857

×1.5 ×1.5 ×1.5 ×1.5 ×1.5

67.5
45.0
22.5

101.25
67.5
34.75

1025×15
5062 5
10125
151875

~~0.04 0.12 0.42~~ 10

0.04, 0.12, 0.42, 1.68, 2.08, 10.4

3

4, 12, 42, 168, 208, 1040 1090

S-E

DIM, GLP, JOT, MRV, PUY,

JK NO MN QR PQ U ST WX SKB VW

+3 +3 +3

4 9 13 7 12 16 10 15 20 13 18 22 16 15 25 SX

DIM, GLP, JOT, MRV, PUY, [illegible]

+3 −3

9 20 12 17

ITWN : LQZK

23 14 26 11

−3 +3 +3 +3

ITWN : LQZK

−3 −3

22 16 16

VUP = 80

PBO = 48

LSB = 33

19
14
33

22
9
16
53

19 2

22+42 16

VUP = 80

21

21×22=42

16+32+30

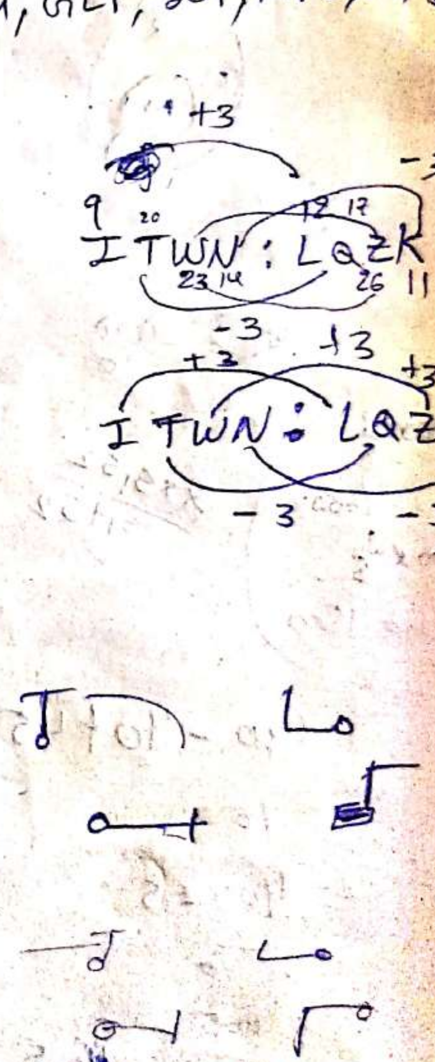
PBO = 48

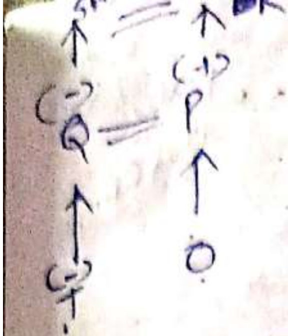
16×2 = 32

15

34
16
50

16
30
2
48

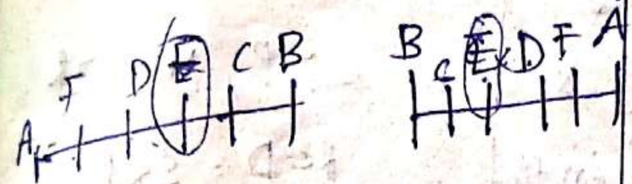




A$B → A Mother of B
A brother of B
A@B →
A father of B
A*B → A father of B

mother father bro fath
H $ C * J @ M * Q

A, E, F   B, C, D

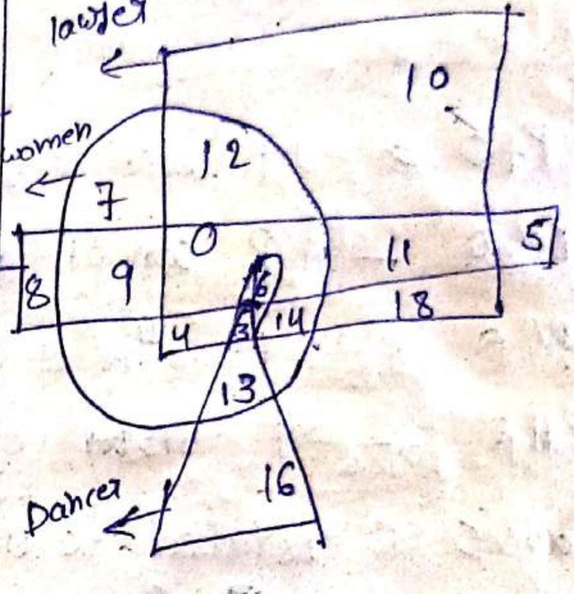


	F	C	H	B	V
P	✓		✓	✓	
Q	✓	✓			✓
R		✓	✓		✓
S			✓	✓	✓
T		✓		✓	

P S

T

in the following diagram, the rectange, the circle, the square and the triangle stand for Footballer, women, Lawyer and Dancer respectively. The numbers in different segments show the number of persons.

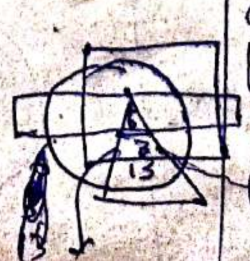


① How many Lawyers are there who are NOT women.

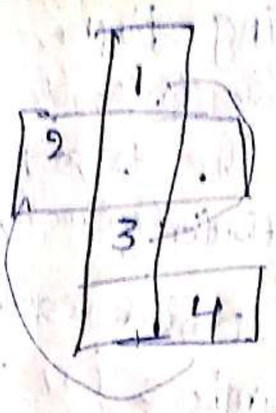
(A) 21
(B) 39
(C) 53

10+11+18
= 39

② How many women dancers are either lawyers or footballers but not both?



(A) 3 womens



1 2 3 4 5 6 — 6 5 4 3 2 1
SUNDAY : YADNUS

1 2 3 4 5 6 — 6 5 4 3 2 1
CURATE : ETARUC

P+Q → P wife of Q

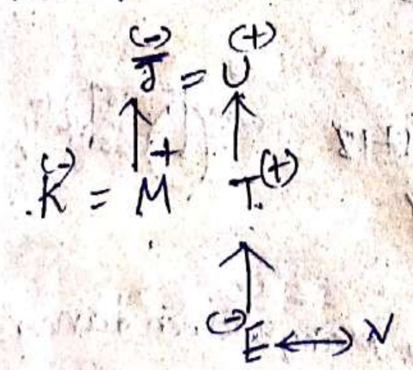
P%Q → P son of Q

P^Q → P father of Q

P#Q → P sister of Q

How is K related to U in the expression K + M%J+U, T^E#U?

wife son wife father
K+M% J+U^ T^ E#V



(Daughter in-law)

6 24 20 15 8 1 22 18 10 4 12 7
FYTO, HAVR, JDXU, LGAY
14 10
NJBA
+2 +3 +3 +3

+2 +2 +2
FYTO, HAVR, JDXU, LGAY
+2 +2 +3

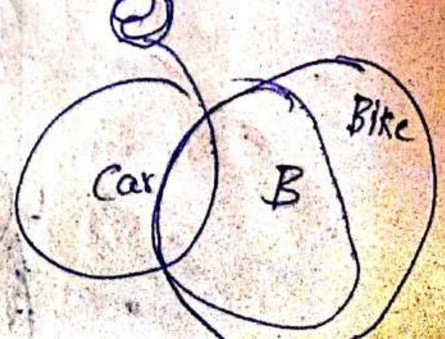
22 − 20 = 2 | 24 − 22 = 2 | 24 − 1 = 23

Is P>R?

1. C>P, M>Q>R
R<D = S<P
P>S>D>R

1 2 3 4 5 6 — 6 5
TISSUE : ISSEUT

A B — 1:2
B:C — 3:4
C:D — 2:3



A6 D, G12 J, M18 P, S24 U

1 4 7 10 13 16 19 21

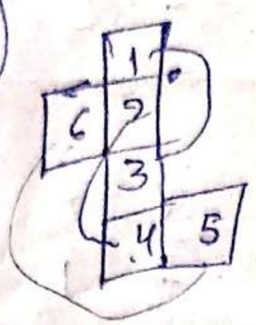
3 3 3 3 3 3 3 +2

7
9
2

N J B A

+2

+1



K – M
L – N
P – O

2 X X X

19 1 7 5
SAGE — -8

20 1 2 19
TABS — 0

22 5 18 2
VERB —

21
-21
0

20
-27
-7

22 9 18 20 21 5 → 4 2 26 2 14 24
VIRTUE ——→ DBZBNX

OMINOUS ——→

KLMNO
O = 2L ①
L = K+M
M = 2K
N = 3M

N = 90
O = 9

V I R T U E
-7 +8 +8 +8 -7 -7
D B Z B N X
4 2 26 2 14 24

15 13 9 14 15 21
O M I N O U
-7 +8 -7 +8 -7 -7
H U B V H N

~~VIRTUE~~

K L M N O

O = 2L – ①
L = K+N – ②
M = 2K – ③
N = 3M – ④

N = 90 K ?

N = 3M
90 = 3M
M = 30

eq-③
M = 2K
30 = 2K
K = 15

eq-②
L = K+M
L = 15 + 30
L = 45

eq-①
O = 2L
O = 2×45
O = 90

L = K+M = 15+30 = **45**

N = 3M
90 = 3M
M = 30

O = 2L
O = 45×
= 9

M = 2K
30 = 2K
K = 15

10 2024 15253 2169

CMQ, FPT, JTX, OYC, UFI
$ X

PQRST

R → 2T — (1)

S → $1\frac{1}{2}$ Q — (2)   S = 3T

Q + R → = S + T — (3)

P + S → P + $\frac{1}{2}$Q + T — (4)

eq3 Q + 2T = 1.5Q + T

Q = 2T − 1.5Q + T

T = 0.5Q = $\frac{1}{2}$Q   Q = T

Q = 2T   T = $\frac{1}{2}$Q

eq-2

S = 1.5 × 2T

S = 3T

P =

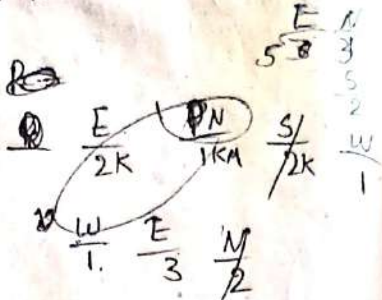
Q + 2T = 1.5Q + T

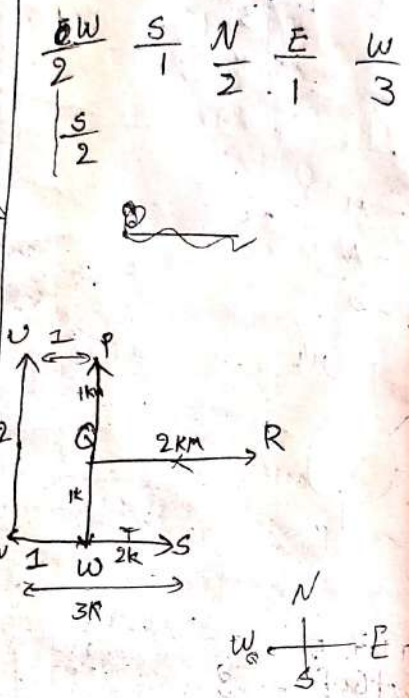
Q = 2T − 1.5Q + T

Q = T − $\frac{1}{2}$Q

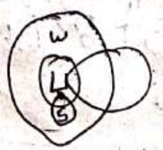
Q = 2T

PQRSTUVWX





E/2   P.



A − B → A wife of B

A/B → A brother of B

A+B → A is daugutor of B

A × B → ...

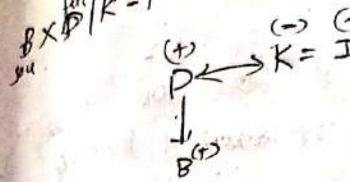
D is father of B?

B/D + I − K

B/D + I − K

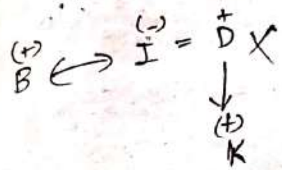
B × P/K − I

B × D/K − I



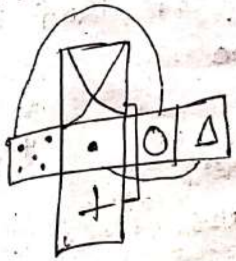
bro wife son

B/I − D × K

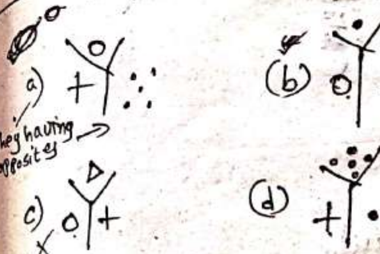


unfolded cube

Problem - 2



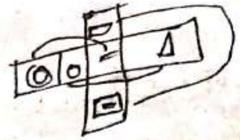
ans → a because opposite face of fig are not made cube



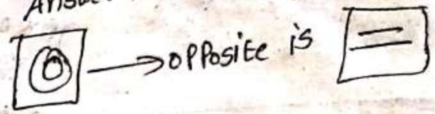
They having opposites

drawn in the ...

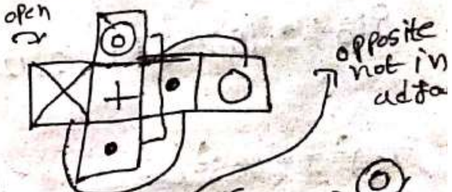
A paper is folded as shown in figures to form a cube. What is the figure opposite to circles?



Answer : a



unfolded cube: which of following cannot be made based on unfold cube in Problem 1



Ans : A

Because opposite of place are cannot be made cube.

$P = (\sqrt{6} - \sqrt{5})$, $q = (\sqrt{10} + \sqrt{3})$,

$(p^2 + q^2)/6$?

$\frac{p^2 + q^2}{6}$

$= \frac{(\sqrt{6})^2 + (\sqrt{5})^2 - 2\sqrt{6}.\sqrt{5} + (\sqrt{10})^2 + (\sqrt{3})^2 + 2\sqrt{10}\sqrt{3}}{6}$

$= \frac{6 + 5 - 2\sqrt{30} + 10 + 3 + 2\sqrt{30}}{6}$

$\frac{11 + 13}{6}$

$= \frac{24}{6} = 4$

100×0.8 = 80.0

$\sqrt{5} + \sqrt{3} > \sqrt{6} + \sqrt{2}$

$(\sqrt{5})^2 + (\sqrt{3})^2 + 2\sqrt{15} > (\sqrt{6})^2 + (\sqrt{2})^2 + 2\sqrt{12}$

$5 + 3 + 2\sqrt{15} > 6 + 2 + 2\sqrt{12}$ ✓

~~$(\sqrt{75})^2 + (\sqrt{74})^2 + 2\sqrt{75}.\sqrt{74}$~~

~~$75 + 74 + 2\sqrt{}$~~

$\sqrt{75} - \sqrt{74}$

Rationalize

$\frac{(\sqrt{75} - \sqrt{74}) \times (\sqrt{75} + \sqrt{74})}{(\sqrt{75} + \sqrt{74})}$

$\frac{(\sqrt{75})^2 - (\sqrt{74})^2}{(\sqrt{75} + \sqrt{74})}$

$B_1 + B_2$

CP $100 + 100 = \frac{200}{2}$

SP $100 \times 0.8 + 100 \times 1.4$) 20

$80 + 140 = \frac{220}{2}$

$\frac{20}{200} \times \frac{100}{2}$

$\frac{20}{200} \times 100$

= 10%

400 bags

CP $100 + 300 = 400$
(20%↑) (↓10%)

SP $120 + 330 = 450$

400

$\frac{50}{400} \times 100$

$\frac{50}{400} \times 100$

4) 50 (12.5
48
20
20
0

R

10rs 1kg × 10kg = 100

↓ −40%   ↓ +35%

10−4 = 6 × 10+3.5 = 13.5 = 81

81 100

$\frac{19}{81} \times 100 = 23.5$

$\frac{19}{81} \times 100 = 23.5$

10kg × 10kg = 100

↓ −40%   ↓ +30

10 − 4 = 6 × 10+3 = 13 =

6 × 13 = 78

22%

452P36 is divisible by 36

What can value of P^2 be?

If a number divisible by 36 Their factors also divisible.

36 → 4, 9

Divisibility of 4 : last 2 digits divisible by 4

9 = sum of digits should be 9.

$\frac{4+5+2+3+6+P}{9}$

$= \frac{20+P}{9}$

$= \frac{20+7}{9}$; P = 7

$P^2 = 49$

59a44b divisible by 36

Then the maximum value of a+b is?

5+9+a+4+4+b

$\frac{22+a+b}{6}$

22+4+4

$\frac{30}{6}$

7+7 = 14

$\frac{22+7+7}{6} = \frac{36}{6}$

$\frac{3+20}{9}$ $\frac{23}{9}$

median = $\frac{n-1+15}{2}$ = 12.5

$\frac{n+14}{2} = 12.5$

n+14 = 2 × 12.5

n+14 = 25

n = 25 − 14

n = 11

$\frac{40}{80} \times 100$ 50%

$\frac{0.025\% \text{ of } 240\% \text{ of } 1/5}{0/9} \times 100$

$\frac{25}{1000 \times 100 \times 100} \times \frac{240}{100} \times \frac{15}{9} \times 100$

$\frac{25}{1000} \times 100 \ \frac{240}{100} \times \frac{15}{9} \times 100$

$\frac{90}{100 \times 9} = \frac{90}{900} = \frac{1}{10}$

$\frac{1}{10} = 0.1$

$((a)^x)^{y})^z = a^{xyz}$

$\{(\sqrt[2]{(x^{-2/3})})^{-2/3}\}^3$

$\{((x^{-2/3})^{1/2})^{-2/3}\}^3$

$x^{-\frac{2}{3}\times\frac{1}{2}\times-\frac{2}{3}\times 3}$

$x^{2/3}$

$x^{+\frac{2}{3}\times\frac{1}{2}\times+\frac{2}{3}\times 3}$

$x^{2/3}$

$A = P(1+\frac{r}{100})^n$

$(P+3020) = (P-500)(1+\frac{20}{100})^2$

$(P+3020) = (P-500)(1+\frac{1}{5})^2$

$\frac{P+3020}{P-500} = (\frac{6}{5})^2$

$\frac{P+3020}{P-500} = \frac{36}{25}$

$36(P-500) = 25(P+3020)$

$36P - 18000 = 25P + 75500$

$11P = 93500$

$P = \frac{93500}{11}$

$P = 8500$

500 —20%— 600

600 —20%— 720

$75 \longrightarrow 47$

$\frac{75\times 47 - 45 + 25}{75}$

$\frac{75\times 47 - 20}{75}$

$\frac{75\times 47}{75} - \frac{20}{75}$

$47 - \frac{20}{75}$

$47 - 0.266$

46.73

25×3020
75500

70400

38000

2
25
39
53
127

$A_1 = \frac{1}{13}$

$A_5 = \frac{5}{13}$ R.u. 8

$\frac{A+B+C}{3}$ $\frac{A+B}{9}$

$E \rightarrow 3$ 1

T.W = 9 $A+B = 1$ per day

$A+B+C = 3$ per day

$C \rightarrow 2$ Then $C = 2$ per day

twice of Total work = 18

$= \frac{18}{2} = 9$

2,20,000 —10%→ 22000

242000 —20— 48400

= 290400

$A,B,C \rightarrow 45\times 3 = 135$

$A,B \rightarrow 41\times 2 = 82$ C = 53

$B,C \rightarrow 46\times 2 = 92$

A@B → A sist of B

A#B → A Bro of B

A+B → A wife B

A%B → A father of B

if C#B+P%T@S, then how B related to S?

mother

100,000 —15%→ 15000

115000 → 23000

= 138000

8 : 7

3P = 12

1P = 4

A = 8×4 = 32

8x 7x

$\frac{8x+12}{7x+12} = \frac{11}{10}$

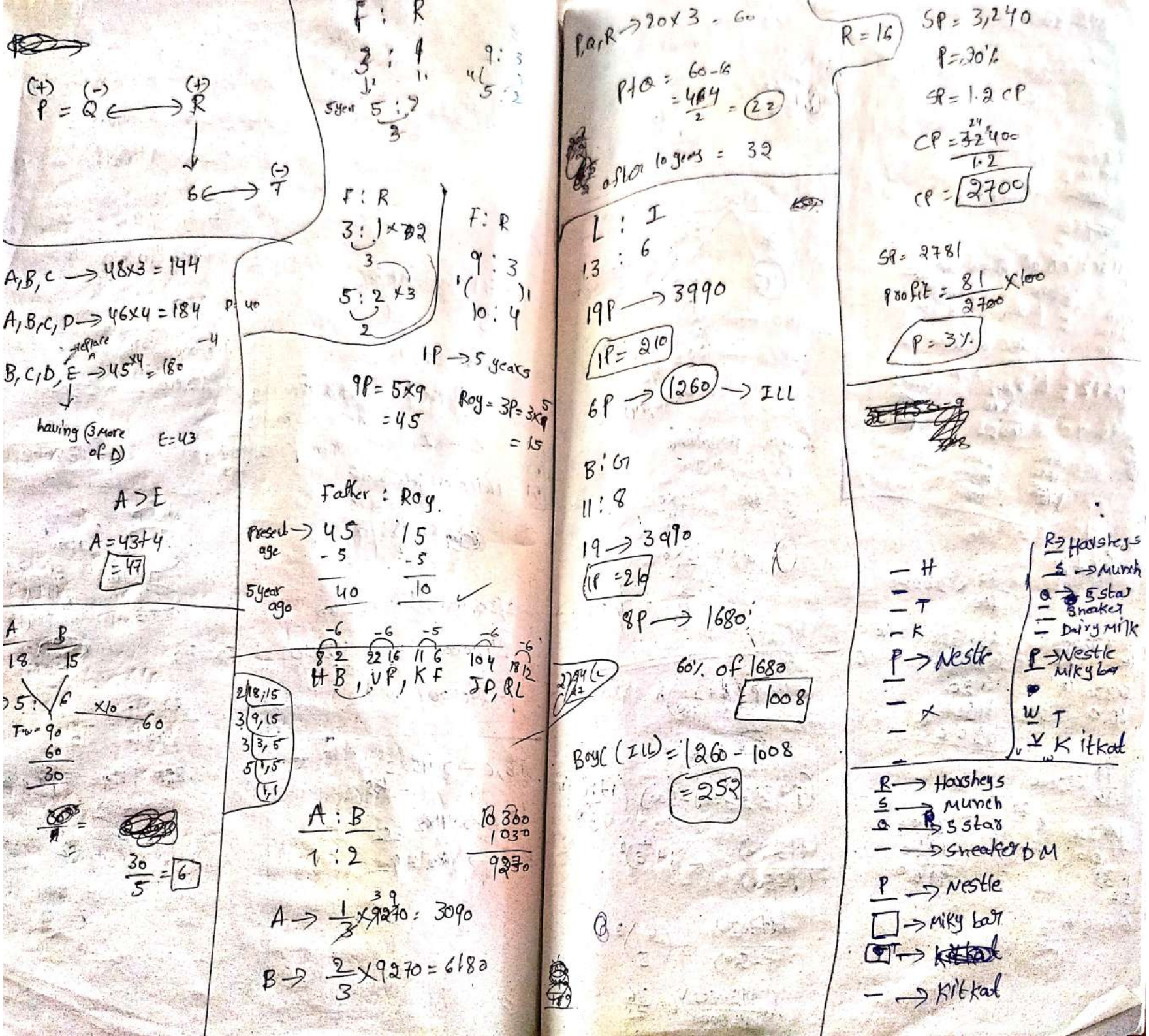
$80x + 120 = 77x + 132$

$3x = 12$

$x = 4$

A = 8P

A = 8×4 = 32



8% + 20

$\frac{28\%}{100} \times 3200$
= 8,960

$\frac{7}{100} \times 32000$

32000
3040
~~28000~~
~~28,960~~

$\frac{7 \times 320}{2240}$

Misc = 7% of 32000
= 2240

$\frac{20 \times 320}{640}$
6400

3040
2240
800

$\frac{20\%}{100}$ of 3200
= 640

6,400
4,672
~~1,728~~

4,672

4,672
640
4032

6400
4672
1728

6% + 19

$\frac{25}{100} \times 32000$

$\frac{6}{100} \times 32000$

$\frac{25 \times 320}{00}$
150
115
1200

6×320
120

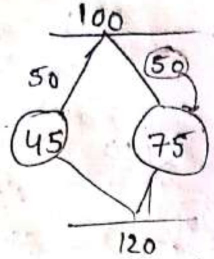
$\frac{19}{100} \times 32000$

19×320
00
1 38
57
6080

6080
1920
4160

- 6080
1920
4160 → spend

$\frac{4160 \times 1000}{32000}$ = 13%



120 − 45
= 75

$\frac{25}{50} \times 100$

50%

Mean (6, 24), 15
12

fourth proportional
12, 15, 0.2

$d = \frac{bc}{a} = \frac{15 \times 0.2}{12}$

$d = \frac{15 \times 0.2}{12}$
$= \frac{3}{12} = \frac{1}{4} = 0.25$

$A = P\left(1 + \frac{r}{100}\right)^n$

= (P + 3020)

$(P + 3020) = (P - 500)\left(1 + \frac{20}{100}\right)^2$

$\frac{(P+3020)}{(P-500)} = \left(1 + \frac{1}{5}\right)^2$

$\frac{(P+3020)}{(P-500)} = \left(\frac{6}{5}\right)^2$

$\frac{(P+3020)}{P-500} = \frac{36}{25}$

$\frac{P+3020}{P-500} \times \frac{36}{25}$

36P − 1800 = 25P + 75500

36P − 25P = 1800 + 75500

11P = 85300

= 8500

---

10 years ago QA → 70
8+35

19
11
8

present ch → 2×19 = 38
present M&S → 2×34 = 68
present age of wife & daughter → 2×24 = 48

10 years 70

---

present

M+W → 90
S+D → 38
M+S → 68
W−D → 24

S+D = 38
S−D = 2
2S = 40
S = 20

3+4

M+S+W−D = 68+24

S−D = 68+24−90

S−D = 2

$\frac{12}{100}$ 20 → 23

$20^2 \to 23^2$

$20^3 \to 23^3$

$5\sqrt{5} \times 625 \times \sqrt[4]{5} = 5$

$\sqrt{x} = x^{1/2}$, $\sqrt[3]{x}$ =

$\sqrt[4]{x}$ =

$5(5)^{1/2} \times 5^4 \times (5)^{1/4}$ =

a^2

a^2

$5^{1+\frac{1}{2}+4+\frac{1}{4}} = 5^{n+}$

$1 + \frac{1}{2} + 4 + \frac{1}{4} = n +$

$1 + \frac{1}{2} + 4 + \frac{1}{4} = n +$

$\frac{4+2+16+1}{4} = n$

$n = \frac{23}{4} - \frac{1}{5}$

$n = \frac{115 - 4}{20}$

$= \frac{111}{20}$ $5\frac{11}{20}$

$x = 43 \times 18 - 6 \times 18 + \frac{3}{5}$ of

[125% of 80% of $(0.\bar{6} + 1\frac{1}{3})$

$+ \sqrt{(\frac{8}{27})^{\frac{4}{3}}} \times 9$

$666 + \frac{3}{5} [\frac{125}{100} \times \frac{80}{100} (\frac{6}{9} + \frac{4}{3}) + \sqrt{(\frac{2}{3})^{3 \times \frac{4}{3}}} \times 9$

$\sqrt{(\frac{2}{3})^2} \times 9$

$= \frac{3}{5} [(\frac{6}{3}) + \frac{4}{9} \times 3]$

$= \frac{3}{5} [\frac{6+4}{3}]$

$= \frac{3}{5} [\frac{10}{3}]$

666 + 2

= 668

3.872

0.242

315, 630, 810

315   180

315, 630, 810

315   $\frac{180}{2}$ $\frac{180}{3} = 45$

A = 100   B = 180

80

$\frac{80}{180} \times 100$

$= \frac{400}{9} = 44.44$

$\frac{1}{35} \times 100$

$\frac{1}{35} \times \frac{7}{2} \times 100$

= 10%

40% → 280

60% → 420

100% → 700

40%   30%

$40 + 30 + \frac{1200}{100}$

70 + 12

= 82

$17\frac{1}{2} = 630$

100% =

$12\frac{1}{2}\% = 25\% = \frac{1}{8}$

$75\% = \frac{3}{4}$

$\frac{1}{4}$

$\frac{7}{8} + \frac{1}{4} = 630$ 90

$1 = 90 \times 8 \times 4 = 720$

= 2880

$20 + (20) + \frac{20 \times (20)}{100}$

-4

4000   4000   4000

+5%   -15%

4400   4200   3400   12,000

CP = 650

MP   SP   CP

100 → 780 ← 650 (20%)

$\frac{100 \times 120}{100}$

$4(x - 330) = 5(x - 384)$

$4x - 1320 = 1920 - 5x$

$9x = 3240$

x = 360

CP = x   CP = 360

$\frac{40 \times 30}{...}$

1280

780

CP = 360

SP = 390   30

$\frac{30}{360} \times 100$

$\frac{25}{3} = 8\frac{1}{3}$

$8\frac{1}{3}$

$\frac{150}{600} \times 100$ 25

$\frac{750}{600} \times 100$

A : B   2 : 3

$I_1 \times t_1 : I_2 \times t_2 = P_1 : P_2$

$20000 \times 36 : 10000 \times 30$

12 : 5

D = S×T

$S = \frac{1}{T}$

$\frac{1}{3} : \frac{1}{4} : \frac{1}{5}$ 60

$\frac{60}{3} : \frac{60}{4} : \frac{60}{5}$

20 : 15 : 12

$x = d + 75$ 100

$y = d$ (20)   4

$x + y = 20$ 5

$20 \xrightarrow{\times 1.5}$

$20 \to 80$

$20 \times 1.5 \to 30$

$50 \quad 80$

$$\frac{12\times 64.5 + 15\times 59 + 20\times 71 + 10\times 74}{12+15+20+10}$$

$$= \frac{3819}{57} = 67$$

$43 \to 72$

$44 \to x+2$

$Avg = \frac{sum}{No}$

$72 = \frac{sum}{43}$

$sum = 72\times 43$

$$74 = \frac{72\times 43 + x}{44}$$

$x = 74\times 44 - 72\times 43$

6 − 6

= 0

$43 \to 72$

43kg ↓ 56   ↓ +2 74

28 35

29 37

$37+56 = 93kg$

43 34

44 34.5

$34.5 + 21.5$

$= 56$

Mode = 3 median − 2 Mean

(or)

3 Median : 2 mean + Mode

Q) if a, b, and c represents the mean, mode and median of the data given below, what is the value of ?

$3a - 2b + c$

given data

4, 6, 2, 4, 4, 5, 7, 8, 4

options

11.5 ✓

10

13

27.5

$$Mean = \frac{4+6+2+4+5+7+8+4}{8}$$

$= \frac{40}{8} = 5$

Mode = 4 → it is repeated

Median = write ascending order first

2, 4, 4, 4, 5, 6, 7, 8

$= \frac{4+5}{2} = 4.5$

$3a - 2b + c$

a = Mean

b = Mode

c = Median

$= 3(5) - 2(4) + 4.5$

$= 15 - 8 + 4.5$

= 11.5

The following table gives the rainfall on six days at random during a summer month?

Date	3	10	15	21	27	31
Rainfall mms	38	39	34	40	35	36

what is standard deviation (in mm nearest to two decimal place)?

1) 2.25

2) 1.92

3) 2.16

4) 2.07

$$\sigma = \sqrt{\frac{\Sigma (x_i - \mu)^2}{N}}$$

x	$\bar{x}$	$(x-\bar{x})^2$
38	37	$(38-37)^2 = 1$
39	37	$(39-37)^2 = 2^2 = 4$
34	37	9
40	37	9
35	37	4
36	37	1

$$x = \frac{38+39+34+40+35+36}{6}$$

$= 37$

$$= \sqrt{\frac{\Sigma (x_i - \mu)^2}{N}}$$

$$= \sqrt{\frac{28}{6}} = \sqrt{\frac{14}{3}} = \sqrt{4.67}$$

= 2.16

Mean deviation

↓

Means how much mean value deviated

Mean deviation

Mean ↗ value

Actual values

$$= \frac{345+256+312+298+425+250+270+316+326+312}{6}$$

= 311

345 − 311 = 34
256 − 311 = 45
311 / 312 = 1

$= \frac{34+45+1+13+114+61+41+5+15+1}{10}$

$\frac{340}{10} = 34$

Mode = Max repeated
= 34 × 312
= 10608

A = x −4y (x−4)
B = x+8 −4y (x+8−4)

ratio $\frac{x-4}{x+4} = \frac{1}{2}$

2x − 8 = x + 4

x = 12

B = x+8
B = 12+8
B = 20

1) At Present A, is younger than B by 8 years, if 4 years ago, their ages were in the ratio 1:2, then what is the present age of B (in years)?

Age

Five years ago Rahul was 5 years less than three times of the sum of the ages of his three children. After five years his age will become 5 years more than the sum of the ages of his children. Then what is the present age of Rahul?

children $S_1+S_2+S_3 = x$

$(R-5) = 3(S_1-5)(S_2-5)(S_3-5)$

$(R-5) = 3(x-15) - 5$

R = 3x − 45

After 5 year

$(R+5) = (x+15)+5$

R = x+15

3x − 45 = x+15

2x = 60

x = 30

R = 30+15
= 45 present age

A 5, B 6, C 12
12, 10, 5 Eff
60 (work capacity)

$= \frac{60}{12+10-5}$

$= \frac{60}{22-5}$

$= \frac{60}{17}$

$= 3\frac{9}{17}$

10) 17 (
140% →
100
$\frac{40}{140} \times 100$
$28\frac{4}{7}$

7) 200 (28
14
60
56
4
$28\frac{4}{7}$

$\frac{6}{5}$ of [(16 × 33.33% of 48 − 176) ÷ 4 + 65]

$\frac{6}{5}[(16 \times 16 - 176) \div 4 + 65)$

$\frac{6}{5}[256 - 176) \div 4 + 65]$

$\frac{6}{5}[80 \div 4 + 65]$

$\frac{6}{5}[20+65) =$

$= \frac{6}{5} \times 85 = 102$

	B_1	B_2	
CP	50	50	= 100
	×0.8	×1.4	
SP	40	70	= 110

10% profit

l 8%, b 5%

The length and breadth of a rectangle are increased by 8% and 5% respectively. By how much percentage will the area of rectangle increase?

formula $a+b+\frac{ab}{100}$

$8+5+\frac{8 \times 5}{100}$

$13+\frac{40}{100}$

MP = 770

$100\% = \frac{770}{5}$

$20 =$

A person allows 10% discount for cash payment from the marked price of a toy and still he makes a 10% gain. What is the cost price of the toy which is marked rs 770?

MP —10%→ [ ] ←+10%— CP

693 630

770
− 77
693

from options

a) 610
b) 620
c) 630 → +10% = 693
d) 640 → 10% = 63

630 + 63 = 693

A student multiplied a number with 3/4 instead of 4/3. What is the error percentage?

Actual	Mistake
$\frac{4}{3}$	$\frac{3}{4}$

LCM of 3, 4 = 12

$12 \times \frac{4}{3}$ $12 \times \frac{3}{4}$

(16)   (9)

7

$\frac{7}{16} \times 100 = \frac{700}{16} = 43.75\%$

I — monthly salary 27500; E — 35%, 15%; S — save 40% of remaining income

35% on food articles, 15% of remaining on clothes

How much does she save (in ₹) every month?

$5 \times 13 = 65$

$\left[27500 \times \frac{65}{100}\right] \times \frac{85}{100} \times \frac{40}{100}$

$27500 \times \frac{13}{20} \times \frac{17}{20} \times \frac{2}{5}$

100 − 35% = 65
100 − 15% = 85

$13 \times 17 = 221$

$221 \times 55 = 12,155$

$\frac{12155}{2} = 6,077.5$

58) Bhavani spends 68% of her income. Her income increases by 15% and her expenditure increases by 10%. How much is the increase in the percentage of saving?

I = E + S

100 − 68 + 32

+15% ; +10% (6.8) ; (8.2)

115 − 74.8 = 40.2

115.0 − 74.8 = 40.2

$\frac{8.2}{32} \times 100$

$\frac{410}{16} = 25.62\%$

I = EXP − S

100, $\frac{16}{100}$, ↑ +25%

$100 \times \frac{16}{100} \times \frac{25}{100}$

I = E + S (+10%, +25%)

I = E + S

116 = 100 + 16

I = E + S

116 = 100 + 16

+14.5 (12.5%), +10.5%, +4 (25%)

130.5 = 110.5 + 20

$\frac{14.5}{116} \times 100 = 12.5$

110 : 80 :: 1000 : 40

100 —+10%→ 110

−20 ; 80 rs —40%→ 112

500 × 100 = 50,000

100 —15%→ 115

-25% ↓ | -60rs

75rs +32% → 99

+24

16rs = 60

1r = 60/16

3.75

CP = 100 so 100 × 3.75

= 375

In a library, 20% of the books are in Hindi, 50% of the remaining in English, and 30% of the remaining are in French. The rest 6300 books are in the regional language. Find the number of book in the library.

Let assume

100 ↓ -20%

80 ↓ -50%

40 ↓ -30%

28 = 6300

1 = 225

100 = 22,500

The base of a triangle is increased by 40%. What percentage (correct to two decimal places) should its height be increased so the area increases by 60%?

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

$= 40 + b + \frac{40 \times b}{100} = 60$

Triangle area $= \frac{1}{2} \times b \times h$

$20 + b + \frac{40 \times b}{100}$

$b + \frac{2}{5}b = 20$

$\frac{5b + 2b}{5} = 20$

$\frac{7b}{5} = 20$

$7b = 100$

$b = \frac{100}{7} = 14.29\%$

Another Method

Triangle area $= \frac{1}{2} \times b \times h$

$A = \frac{1}{2} \times b \times h$

100 = 10 10

160 14

$160 = 140 + \frac{14x}{10}$

$20 \times 10 = 14x$

x = 14.29%

A retailer in books makes a gain of 8% on selling a book by offering a discount of 10% but he incurs a loss when he allows a discount of 19%. What is the percentage of loss?

$MP \times \frac{90}{100} = 108$

8% Pro.

MP —-10%→ SP ←+8%— CP

120 108 100

-19% 97.20 loss 2.8

81%

120 × 81 / 120

960

9720

A person purchased a few sheep from a wholesaler at a certain price. Due to some urgent requirement of money, he sold half of them at a loss of 10%. At what percent profit should he sell the remaining sheep to make an overall 20% profit?

100

90 50

-10 25 +20%

4500 + 75

120rs

25% = 1/4

Price 4 → 5

cons 5 → 4

1/4 × 100 = 20%

$\frac{25}{50} \times 100$

= 50%

I E S

125

100 ↓ 25%

125 ↓ 25%

360/10.9 360/12

5 → 4

4 → 5

price 5 → 4

consum 4 → 5

×2 1 ×2

8kg 10kg

360/8 360/10

= 45 36

3 = 6kg

1 = 2kg

30/100 = 1/10

price 10 → 13

consum 13 → 10

×2 3 ×2

$\frac{2600}{26}$ $\frac{2600}{20}$

= 100, 130

~~5187 = 3,822~~

$\frac{24700 \times 21}{19 \quad 100}$: $27300 \times \frac{14}{100}$

19 : 21

$\frac{24700 \times 21}{19 \quad 100}$: $\frac{13}{100} \times 27300$

5187 : 3822

$\frac{5187}{3822}$

57000 ↓ 5% 54,150

CP

$57000 \times \frac{95}{100}$

5700 : 95 :: 105 : x

$\frac{57000}{95} = \frac{x}{105}$

$\frac{57000 \times 105}{95}$

= 63000

$5700 = CP \times \frac{95}{100}$

$CP = \frac{5700 \times 100}{95}$

6000

94 : 64 :: x : 102

$\frac{94}{64} : \frac{102}{x}$

$\frac{94 \times 102}{64} = x$

$64 = \frac{6}{100}$

SP = 375

$C.P = \frac{25}{4} \times \frac{1}{100}$

x

94

$SP = CP \times \frac{94}{100}$

$100 = CP \times \frac{110}{100}$

100 : 110 :: x : 200

$\frac{10000}{100}$ = CP

CP = 90

$\frac{100}{110} = \frac{x}{200}$

$\frac{100 \times 200}{110}$

SP = CPx

$SP = CP \times \frac{94}{100}$

$SP = 6000 \times \frac{105}{100}$

= 63000

$SP = CP \times \frac{94}{100}$

$64 = CP \times \frac{94}{100}$

$CP = \frac{6400}{94}$

SP = 94

$SP_2 = 102$) 8

8x = 64

$x = \frac{64}{8}$

60% CP = 50% SP

CP = 200 pro = 110 loss = 90

SP = $\frac{200 \times 110}{100}$

= 220

$SP = 200 \times \frac{90}{100}$) 40

= 180

64 : 94 :: x : 102

$\frac{64}{94} \cdot \frac{x}{102}$

$\frac{102 \times 64}{94}$

MP - 90%

CP = 200 + 200 = 400

Total SP = 220 + 180 = 40

CP = 15x = SP = 20x

BM B S

-6 7x : 3x

Present 7x+6 : 3x+6

+8 7x+6+8 : 3x+6+8

$\frac{7x+14}{3x+14} = \frac{7}{4}$

7x = 42

x = 6

3x+6

3(6)+6

18+6

24

7 : 9) 3P = 27

7 : 12

1P = 9 lit

Milk = 7P = 7×9 = 63lit

2 : 1

1 : 2) 3P = 60 litres

2 : 4 = 60

1P = 20 lit

3P = 60

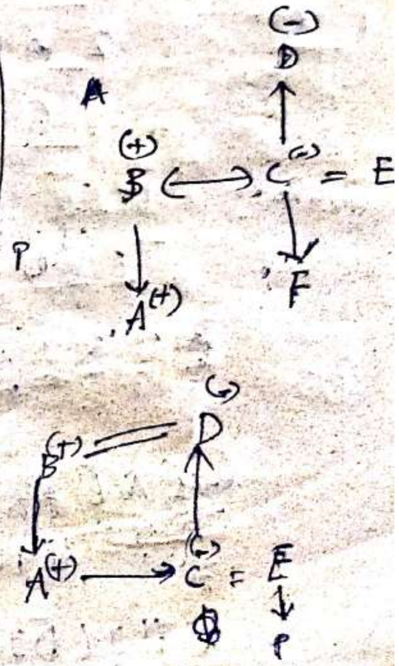
B4A4, D16C7W, G49A3K

2 4 7 K100J1

16

O (LP) (TV) win

(C) P (b) P



49

N

QT-29

A, B, GP → B

S - - W T O - - U

T

7 — F
6 — G
5 A
4 — B
3 — F
2 — E
1 — C

7 — AB
6 E G
5 G A
4 C B D
3 — BF
2 A
1 D C

S _ Q W T R _ U

7 — B
6 E E
5 G
4 A CP
3 F
2 G
1 A

7 — B
6 — E
5 — CD
4 —
3 F
2 A
1 G

R T R _ U

S
W - - Q W

T R Z U P S V Q W

X T R Z U P

R T _ P U Z S - - - W

R T R P U Z S - - - W

GENERATE → 91
75 14 5 18 1 20 5

CHILDISH →
3 8 9 12 4 9 19 8

2, 3, 6, 15 — 123

2×3-3 = 3
3×3-3 = 6
6×3-3 = 15
15×3-3 = 42
42×3-3 = 123

32, 34, 43, 71, 136

1, 3, 9, 33, 153

1×2+1 = 3
3×2+3 = 9
3×2+3 = 9

2 6 24 120 720
1, 3, 9, 33, 153

720

BEC, CID, FOG, KUL
FGH JKLMN

RS
QR

71
43
27 CATEGORY → DBRCJRN

136
71
65 DISCOVER → EJQARYAN

ELEPHANT →

13 15 21 19 5
MOUSE →
18 1 20 5
RATE → 6

NETWORK
14 5 20 23 15 18 11

1, 3, 9, 33, 153 873
2 6 24 120 720
×3 ×4 ×5 ×6

720
153
873

19 15 13 5 19 8
SOMESH → 240123

18 1 10 9 14 9
RAJINI → 798565

MANI → 0965

315 105 108 36, 39, 13 16
210 3 72 3 26 3

20, 30, 45, 67.5, 101.25 ?
10 15 22.5 33.75

UVP = 80

PBO = 48 LSB =

16
6
32
15
47+1

22×21
22
44
462
+16
478

L
5

4 9 13 7 12 16 10 15 20 13 18 22
DIM, GLP, JOT, MRV,
16 20 25 19 24 2
PUY, SXB

9 20 23 14 12 17 26 11
ITWN : LQZK
+3 +3

10 26 6 25 13 23 9 22
JZFY : MWIV ×
+3 +3

21 19 24 12 23 2 10
USX : LWBJ

Q = P
↑ ↑
T O

A$B → A Mother of
A@B → A broth of
A*B → A father

Mo fath bro father
H$C*J@M*Q

M fat bro father
Q$C*J@M*H

f bro bro far
Q*C@J@M*H

4th
A F D E C B

B C E D F A
4th

	f	cric	H	B	V
P	✓		✓	✓	
Q	✓	✓			✓
R		✓	✓		✓
S			✓	✓	✓
T		✓		✓	

FXTO, HAUR

P, S

FXTO, HAUR, JDXU, LGAX, NJBA
6 24 20 15 8 1 22 18 10 4 24 15 12 7 1 24 14 10 2 1
+3 +3 +3 +3

10
11
18
39

3
13

K+M%J+U^T^E#V

J = U
K = M
T
E ↔ V

P+Q = P wife of Q
P%Q → P son of Q
P^Q → P father of Q
P#Q → P sister of Q

wife son E F sis
K+M%J+U^T^E#V
daughter in law
devyam

K = M

K+M%J+U

P>R

C>P, M>Q>R

R<D = S<P

P>R

TISSUE : ISSUET

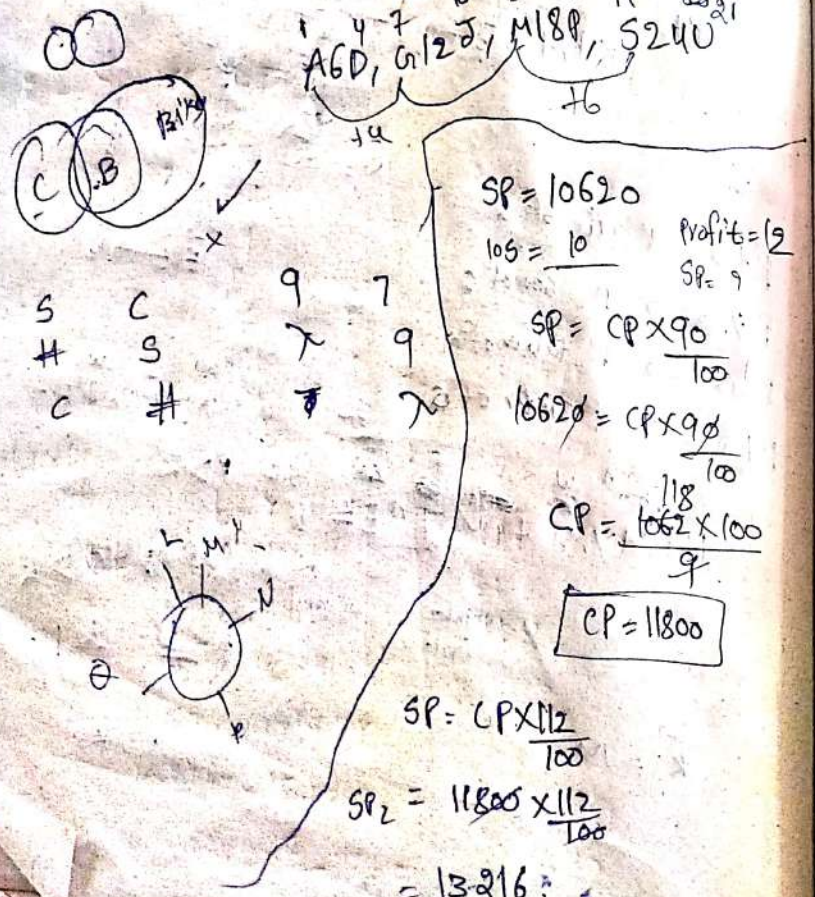
WONDER : ~~WONDER~~ WONDERE

Volume : OVULEM

Delhi Noida Guru → Jo li la

UP Delhi Gujarat → Na thu la

UP Gurugram Raj → Shin na Jo



S	C	9	7
H	S	x	9
C	H	7	x

SP = 10620

105 = 10

Profit = 12

SP = 9

$SP = \frac{CP \times 90}{100}$

$10620 = \frac{CP \times 90}{100}$

$CP = \frac{10620 \times 100}{90}$

CP = 11800

$SP = \frac{CP \times 112}{100}$

$SP_2 = \frac{11800 \times 112}{100}$

= 13216

I = 18200 - 100

E = 89

S = 11

$\frac{18200 \times 11}{100}$

= 2002

A income is 18200 He spent 89% of Extend calculate his savings

$A = \frac{2 S_1 S_2}{S_1 + S_2}$

$= \frac{2 \times 6000}{110}$

54.54

2 men can do a work in 14 days. Then find how many men are required to finish the work in 4 days!

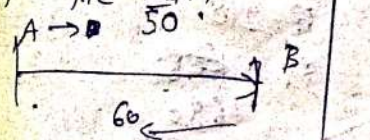
$\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$

$\frac{2 \times 14}{W} = \frac{M_2 \times 4}{W}$

$28 = M_2 \times 4$

$M_2 = 7$

A train moves from A to B and returns from B to A but the speed from A to B was 50 km/hr and the speed from B to A is 60 km/hr. what is the average speed of the train?



Find the minimum a

$f(x) = 3 + |12x + 11|$

if $x = \frac{-11}{2}$

$f(\frac{-11}{2}) = 3$

$f(\frac{-11}{2}) = 3 + |2(\frac{-11}{2}) + 11|$

639	1468
-4	-3
635	1465

A man, age present is's two and half times of sum of Ages of his two daughte 30 years later his age will the sum of ages of his two daughter. Then what will be man ages in 12 years from now?

$D_1 + D_2 = x$

$M \cdot 2\frac{1}{2} = \frac{5}{2}x$ -

$M + 30 = x + 60$

$M + 30 - 60 = x$

$M + 30 - 60 = \frac{2M}{5}$

$M - 30 = \frac{2M}{5}$

$M - \frac{2M}{5} = 30$

$\frac{3M}{5} = 30$

$M = 50$

$50 + 12 = 62$

Mode = 3 Median − 2 Mean

$L = 3N - 2M$

---

12 → 36
↓×2 ↓×2
24 → 72

Grand father

$+b + \frac{ab}{100}$

$b = x$

$L = 4x + 4$

$A = l \times b$

$154 = 4x + 4\,(x)$

$154 = 4x^2 + 4x$

$4x^2 + 4x - 154 = 0$

$2(2x^2 + 2x - 77) = 0$

P, Q, R → 20

+10 → 26

P Q R
20 20 20
↓ +16
26

P+Q+R = 260

R = 26, Present 16

P+Q = 44

$\frac{P+Q}{2} = \frac{44}{2} = 22$

After 10 yr = 32

P Q R
20 20 20
22 22 +16
32 32

Total = 3,990   L : I = 13 : 6

B : G
11 : 8   60%

19P → 3990 (210)

1P = 210

SP = 1680

19P → 3990

6P → 1260

60% of 1680

1008 Girls

I.I

Boys (I.I) = 1260 − 1008
= 252

Pro = 20

SP = 3,240

SP − 2,781

CP = 2700

SP = 2,781

SP =

$SP = CP \times \frac{81}{100}$

2,781 = 2700 ×
= 2187

$SP = \frac{P}{CP} \times 100$

$= \frac{81}{2700} \times 100$

P = 3%

A+B+C = 3

A+B → 9

C →

1 3 9

C → 2

$\frac{18}{2} = 9$

A+B+C   A+B
3   9

E → 3 6 9

2,20,000 10% → 22,000

2,42,000 20% → 48,400

290,400

A, B, C → 45

A, B → 41

B, C → 46

A B C
45 45 45
41 41 53
41 46 46

1,00,000 15% 15,000

115,000 20% 23,000

138,000

A@B A sister of B

A#B A Bro of B

A+B A wife of B

A%B A father of B

C#B+P%T@S, then how B related to S

A : B
8 : 7
+12 ↓ 3( ) 3P = 12   1P = 4
11 : 10

8×4 = 32

(x+3)

P → Q ← → R

T ← → S

A, B, C → 48

A, B, C, D → 46

B, C, D, E → 45

D = 46-6

D = 40 E = 43

(A, B, C, D) 4 → 46

(E, B, C, D) 4 → 45

A > E A = 43+4

A = 47

A B

18 15

E → 15 18 ×10 90

270
180
90

$A_{R.w} = \frac{90}{15}$

= 6

+5 2/5

F : R

3 : 1

5 : 2

9 18, 15

2 2, 15

15 1, 15

1, 18

F : R

9 : 3

10 : 24

1P = 5

F R

9×5 = 45 4×5 = 20

-5

= 40

4 : 1

HB, VP, KF, JD, RL

8 2 22 16 11 6 10 4 18 12

6 6 5 6 6

a:b = 2:5

b:c = 5:6

a:b:c = 2:5:6

a:b = 2:5

b:c = 5:6

A:B:C = 10:25:30

= 2:5:6

A:B = 7:5 B:C = 9:11

A:B = 9:11

B:C = 9:11

a:b:c 63:45:55

3A = 4B = 5C then A:B:C

A:B:C = 20:15:12

a:b = 2:3 ×3 6:9

b:c = 9:8 9:8

c:d = 4:3 ×2 8:6

6:9:8:6

a:b:c:d

a = 8 b = 12

c = 18

$d = \frac{bc}{a}$

$d = \frac{12 \times 18}{8}$

= 27

$c = \frac{b^2}{a}$

$= \frac{36}{36}$

= 1

a = 0.16 0.04

mean = $\sqrt{0.16 \times 0.04}$

= 0.08

98

2:3

5:8

1P = 98

a:b 2:3

b:c 5:8

a:b:c = 10:15:24

49P = 98

1P = 2

121 or 9

$A \frac{4}{15} = \frac{2}{5} B$

$\frac{A}{B} = \frac{15 \times 2}{5 \times 4}$

$\frac{A}{B} = \frac{30}{20}$

$\frac{A}{B} = \frac{3}{2}$

5P = 121 or 9

1P = 242

2 × 242

= 484

2 : 3

5 : 7

4 : 6

5 : 7

1P = 4

4×4 = 16

782 3 parts

$\frac{1}{2} : \frac{2}{3} : \frac{3}{4}$

$\frac{1}{2} \times 12 : \frac{2}{3} \times 12 : \frac{3}{4}$

6 : 8 : 9

23P = 782P

1P = 34

6P = 6×34

= 204

M P B

500 : 700 : 800

40% 50% 75%

200 350 +600

700 : 1050 : 1400

10 : 15 : 20

2 : 3 : 4

2x : 3x

$\frac{2x+4}{3x+4} = \frac{5}{7}$

15x − 14x = 20 − 28

x = 8

2(8) = 16

7 : 13
11 : 17

4P = 24

1P = 6

13 − 7 = 6

6P = 6×6 = 36

3 : 4
3 : 5

6 : 8
3 : 5
3P = 6

1P = 2

2×2 = 16

I → 5 : 4
E → 4 : 3

1P = 12000

5P = 5×12000 = 6000

4P = 4×12 = 48

I → 5 : 3
9 : 5

1300

900

I = S + E

20 : 12
18 : 10

2P = 1300

1P = 650

20P = 20×650 = 13,000

I − S = E

I = S + E

1300 − 9

3x 900 − 5

25x − 27x

−2x = 600

x = 300

I − S = E

$\frac{5x - 1300}{3x - 900} = \frac{9}{5}$

2x = 160

x = 800

5x = 5(800) = 40,000

B = 3x = 3(800) = 2400

26 : 3

I = S + E

14,500 = 26 + 3

14,500 = 29P

1P = 500

3P = 3×500 = 1500

I → 9 : 8
E → 7 : 6
2P = 800

2P = 800

1P = 400

9P = 3,600

8P = 3,200

6,800

5 : 6
6 : 7
1P = 7

5P = 7×5 = 35

BM : BA

7x : 3x

7x+6 : 3x+6

7x+6+8 : 3x+6+8

$\frac{7x+14}{3x+14} = \frac{7}{4}$

7x = 98

x − 6

3x + 6

3(6) + 6

24

M : W
7 : 9
7 : 12
3P = 27

1P = 9

7×9 = 63 lit

M : W
2 : 1
1 : 2
3P

2 : 4

3P = 60

1P = 20 lit

3P = 60 lit

$\frac{40+10+15+20+35+x}{6} = 25$

$\frac{120+x}{6} = 25$

120 + x = 25×6

120 + x = 150

x = 150 − 120

x = 30

5 | 125

$\frac{5+125}{2} = \frac{130}{2} = 65$

13×5 = 65

17 18 19 20 21 22 23 = 20

57 59 | 61 63

60

37

39 41 43

I : II : III
3 : 6 : 2 ×3
3+6+2 = 11
11P = 443
11P = 132
1P = 12
6P = 72

I : II : III
9 : 10 : 5↑8
Sum = 31×3 = 93
2+10+5
= 17P + 8 = 93
17P = 85
1P = 5
2×5 = 10

25 8

11 → 30] 5×5 = 25
5 → 25] 2×5 = 10
5 → 28
6th = 30+25+10 = 65

11 → 30] 5×5 = 25
5 → 25] 2×5 = 10
5 → 28
6th = 30+25+10
= 65

40 I → 50(A)
(H+L)
38 I → 48
H+L = 50+50+(3 ...
= 176

11 → 30] 4×6 = 24
6 → 34] 2×6 = 12
6 → 28
30+24−12 = 42

T = 14+35 = 49
35

8 — 2.5 →
New → 60 kg
= 56 + (8×2.5)
= 60 − (8×2.5)

6P → 7.5 kg
60 kg
L.P = 60 = (6×7.5)
= 60 − 45

S M T W Th → 25 (A)] 1.5
M T W Th Fr → 26.5 (A)
F = S + 1
= 28 (5×1.5)
= 35.5

M T W → 38) 3+3 = 9
T W Th → 35
M : Th
7 : 2
5P = 9
1P = 9/5 = 1.8
7×1.8 = 12.6

1600
32
16

Q P R 80
x+5 x+30 x+60
30 30
x+30 = 80
x = 50

R% = 10 1/10 11/10
T = 2

10,000 —10%→ 11,000
1000
11,000 —12%→ 12,320
+1320

9800

9800 2/7 2800
2800 2/7 800
2800 = 5600 700
5600
1400
6400

20,000
4
400 39
800 12,600
9800 2/7 2800
12,600 2/7 3,600 → 16,200

4000

2×18/3.6

127P = 64800

4000 —10%→ 400 —10%→ 40 —10%→ 4 —10→ .4

4 : 6 : 4 : 1
4×400 = 1600 4×4 = 16
6×400 = 240 .4×1 = .4
= 1856.4

4000 —10%→ 4400
400
4,400 —10%→ 4,840
440
4,840 —10%→ 5,324
484
5,324 —10%→ 5,856.4
532

80,000

3 3 3 3

80,000 — 10% — 8000 — 10% — 800

80 — 10% — 8

4 : 6 : 4 : 1

8000 : 800 : 80 : 8

3200 4800 320 8

37,128

P : A

I 5 : 6

$\frac{1}{5}$ $\frac{6}{5}$

$\frac{1}{10}$, $\frac{11}{10}$

10% II 10 : 11

10% 10 : 11

III 5 : 6

P → 2,500 : 4,356 → A

R = 4 G+1856

10,000

1856

× 4

= 7424

$(CI)_2 - (SI)_2 = 40$

21% — 20% = 1%

1% = 40

100% 4000

8% 8% 8%

31,250 8% 2500 8% 200

3 : 3 : 1

2500 200 16

7500 + 600 + 16 = 8116

$3(10) + \frac{100}{100}$

$(CI)_3 - (SI)_3 = 31$

31 — 30

$P = \frac{100^3 D}{R^2(300+R)} = \frac{100 \times 100 \times 100 \times 31}{100(310)}$

1000

$\frac{3}{5}$ ×4 → 12, ×4 → 20

$25\% = \frac{1}{4}$ ×12 → 12, ×12 → 48

A 10, B 15

E → 3, 2

T.W 30

$(A+B)_T = \frac{TW}{E} = \frac{30}{5} = 6$

A 10, B 20, C 30

E → 6, 3, 2

T.W 60

$(A+B+C)_T = \frac{T.W}{E} = \frac{60}{11} = 5\frac{5}{11}$

A+B 12, B+C 15, C+A 20

E → 5, 4, 3

T.W = 60

$(A+B+C)_T = \frac{T.W}{EF}$

$2(A+B+C) = \frac{60}{5+4+3}$

$A+B+C = \frac{12}{2} = 6$

$(A+B+C)_T = \frac{60}{6} = 10$

A 20, B 12

E → 3, 5×9 → 45

60 − 45 = 15

$\frac{15}{3} = 5$

A 25, B 20

E → 4, 5 × 10 = 50

T.W = 100 − 40 = 60

$= \frac{60}{4+5} = \frac{60}{9} = 6\frac{6}{9} = 6\frac{2}{3}$

5 (25, 20

5 (5, 4

4 (1, 4

1, 1

$A = 10 + 6\frac{2}{3} = 16\frac{2}{3}$

A 14, B 21

3, 2

42

9 + 33 = 51

A 45, B 40

8, 9 × 23 → 207 units

360 − 207 = 153

$\frac{153}{17} = 9d$

B = 9 + 23 = 32 days

A 10, B 20

E → 2, 1

T.W = 20 − 10 = 10

A 10, B 20

4, 2

40 − 12 = 28

$33\frac{1}{3}\% = \frac{1}{3}$ → 5, 15

C 12d, D 15d

×4 5, 4

T.W 60 − 20 = 40

$\frac{40}{4} = 10$

20

A B
12 160

T.W = W.E × T

$B_T = \frac{T.W}{eff} = \frac{100 \times 12}{160}$

$= \frac{15}{2} = 7.2d$

10,000 — SP — 500

8,000 — 10% — 800 — 10% — 80

A B
130
23

$(A+B)_T = \frac{T.W}{eff}$

$= \frac{130 \times 23}{230}$

= 13

7 : 6

CP = $\frac{6}{7}$

SP = 1

P% = $\frac{1 - \frac{6}{7}}{\frac{6}{7}} \times 100$

CP SP
6 : 7

$\frac{1}{6} \times 100$

P% = $\frac{\frac{7-6}{7}}{\frac{6}{7}} \times 100$

$\frac{\frac{1}{7}}{\frac{6}{7}} = \frac{1}{6} \times 100$

P – Mean

q – Mode

R – Median

$P = \frac{6+9+2+4+7+5+8+4}{8}$

= 5

q = 4

R = 2, 4, 4, 4, 5, 6, 7, 8

$\frac{9}{2} = 4.5$

3P – 2q + r

3(5) – 2(4) + 4.5

15 – 8 + 4.5

7 + 4.5

= 11.5

10,0000 — 15% — 115,000
15,000

115,000 — 30% — 149,500
34,500