SSC SOLUTION (FLT-1)

1. $\dfrac{2a+b}{3a-2b} = \dfrac{6+\sqrt5}{9-2\sqrt5} \times \dfrac{9+2\sqrt5}{9+2\sqrt5} \to \dfrac{......}{61}$ option (d)

(OR) Solve $\to \dfrac{(6+\sqrt5)(9+2\sqrt5)}{61} \to \dfrac{54+12\sqrt5+9\sqrt5+10}{61}$

$\to \boxed{\dfrac{64+21\sqrt5}{61}}$

2. $\dfrac{10a^3+4b^3}{11a^3-15b^3} = \dfrac{7}{5} \to 27a^3 = 125b^3$

$\dfrac{a^3}{b^3} = \dfrac{125}{27} \to \dfrac{a}{b} = \dfrac{5}{3}$

$\dfrac{3a+5b}{9a-2b} = \dfrac{15+15}{45-6} = \dfrac{30}{39} = \boxed{\dfrac{10}{13}}$

3. 3 nos $\to$ $x, 2x, 4x$

$\therefore x^2+4x^2+16x^2 = 1029$

$21x^2 = 1029$

$x^2 = \dfrac{\cancel{1029}\,49}{\cancel{21}}$

$\therefore \boxed{x=7}$

$\therefore$ diff b/w greatest & smallest no

$4x-x = 3x \to 3\times7 \to \boxed{21}$

4. Revenue $=$ price $\times$ no. of tickets

$8\times23 : 11\times21$

$184 : 231$

$\underbrace{\qquad}_{+47}$

$184 \xrightarrow{\times200} 36800$

$\therefore 47 \xrightarrow{} 47\times200$

$\boxed{9400 \text{ Rs}}$ Ans

5. $\begin{array}{ll} \text{AC} & \text{ordinary} \\ 4\times3 : & 1\times25 \to \text{Revenue} \\ 12 : & 25 \qquad 37 \xrightarrow{\times2K} 74000 \text{ Rs} \\ & 12 \longrightarrow 12\times2K = 24000 \text{ Rs Ans} \end{array}$

6. $\begin{array}{ccc} A & B & C \\ 9 & 6 & 11 \\ 4 & 3 & 6 \end{array}$
$-1\left(\begin{array}{ccc} 9 : & 6 : & 11 \\ 4_{\times2} : & 3_{\times2} : & 6_{\times2} \end{array}\right)+1$ (make B same)

1 unit —— 500 Rs
$(B+c) = 17 \to 17\times500$
$= \boxed{8500 \text{ Rs}}$ Ans

7. $\begin{array}{ccc} A & B & C \\ 6 & 7 & \\ & 3 & 2 \\ 18 : & 21 : & 14 \end{array}$

4 unit —— 540 Rs
1 unit —— 135 Rs
53 unit —— 135×53 Rs
$\to 7155$ Rs Ans

8. $\dfrac{A}{B+C} = \dfrac{4}{5}\times13 = \dfrac{52}{65}$ make (A+B+C) same

$\dfrac{B}{A+C} = \dfrac{2}{11}\times9 = \dfrac{18}{99}$

$C = \dfrac{47}{117} \times 70,200$
$= 28200$ Rs.

9. $\dfrac14 : \dfrac15 : \dfrac16 = 15:12:10 \to CB = \dfrac{10}{37}\times555$

mistake $= 4:5:6 \to C = \dfrac{6}{15}\times555$

Diff $= \dfrac{\cancel6^{\,111}}{\cancel{15}}\times555 - \dfrac{10}{37}\times555^{\,15}$

$222-150 = 72$ Rs.

10. $\begin{array}{cc} A & B \\ I\to 3_{\times2\times3} : & 5\,\textcircled{\times2\times3} \\ S\to 2\,\textcircled{\times5} : & 3_{\times5} \end{array}$

$I_B = 3\,S_A$

$\begin{array}{cc} A & B \\ I\to 18 : & 30 \\ S\to 10 : & 15 \\ E\to 8 : & 15 \end{array} \therefore \boxed{8:15}$

11. $\begin{array}{cccc} & A & B & C \\ (v) & 9 : & 8 : & 6 \,)\times29 \\ (x) & 8 : & 9 : & 12\,)\times23 \end{array}$
$\uparrow$
To equate total money

loss of B $= 232-207 = 25$
$25 \longrightarrow 1000$ Rs
$1 \longrightarrow 40$ Rs

Total Amt $= 29\times23$ unit $= 29\times23\times40 = 26680$ Rs

12. $\begin{array}{cc} B & G \\ x+30 & x+K \end{array} \to \dfrac{x+30}{x+K} = \dfrac35 \to 5x+150 = 3x+3K$

$K = 50 + \dfrac{2x}{3}$ $K_{min} = 50 + \dfrac{2\times3}{3} = \boxed{52}$

13. $\begin{array}{cccccc} & X & Y & Z & X & Y & Z \\ I\to & (3 & 4 & 2)\times2 \to & 6 : & 8 : & 4 \\ E\to & 5 & 5 & 2 \to & 5 & 5 & 2 \end{array}$

for X $\to \dfrac{E}{I} = \dfrac{15}{18} = \dfrac56$ saving $= 1$ unit $\longrightarrow 3000$ Rs

for y saving $= 3$ unit $\to 3\times3000$

$\boxed{9000}$

14. $\begin{array}{cccc} & A & B & C \\ I\to & (7 : & 9 : & 12)\times8\times4 \\ E\to & (8 : & 9 : & 15)\times7\times3 \\ S\to & 56 : & 99 : & 69 \end{array}$

$A\to \dfrac14 \xrightarrow{} S$ $\therefore E=3$, $\to I$

$\therefore$ for $A \to \dfrac{E}{I} = \dfrac34$

$S \to I-E$

15. $\begin{array}{ccc} & m & F \\ \text{Total}\to & 6 & 5 \\ \text{Each}\to & 4 & 3 \\ \text{No}\to & 18 : & 20 \end{array} \Rightarrow \boxed{9:10}$

No. of persons $= \dfrac{\text{Total salary}}{\text{Each person salary}}$

16. $\begin{array}{cccc} & m & w & c \\ \text{each}\to & 5 : & \dfrac{4}{5} : & 4 \\ & 25 : & 20 : & 16 \\ & 8 & 10 & 10 \\ \text{Total}\to & 200 & 200 & 160 \end{array}$

560 unit $\xrightarrow{} 16562$ Rs
$\downarrow \div28 \qquad \downarrow \div28$
Each W (20unit) $\longrightarrow \dfrac{16562}{28}$
$= \boxed{591\cdot5}$

17. $\begin{array}{cc} I & E \\ 2 : 3 & 5 : 9 \end{array}$

$\times15000 \quad \times15000 \quad \times5000 \quad \times5000$
$30,000 \quad 45000 \quad 25000 \quad 45000$

savings (1st year) $\to 5000$
(2nd year) $\to 0$
Total $\to \boxed{5000 \text{ Rs}}$

18. $\dfrac25 A +40 = \dfrac27 B +20 = \dfrac{9}{17}C +10 = K$ (let)

$\to (K-40)\times\dfrac52 \neq (K-20)\times\dfrac72 + (K-10)\times\dfrac{17}{9} = 600$

$\to (6+\dfrac{17}{9})K - (170 + \dfrac{170}{9}) = 600$

$\to \dfrac{71}{9}K = 600 + \dfrac{1700}{9} = \dfrac{7100}{9}\,^{100}$ $\therefore K=100$

$\to \dfrac25 A +40 = 100 \to \dfrac25 A = 60\,^{30} \therefore \boxed{A=150}$

19. $\begin{array}{cccc} & 50P & 25P & 10P \\ C\to & 7 : & 8 : & 3 \\ A\to & 3.5 & 2 & 0.3 \end{array}$

$5.8 \xrightarrow{\times15} 87$ Rs
10P $C \to 3\times15 = \boxed{45 \text{ coins}}$

20.

	1Rs	50P	25P
C→	5 :	6 :	7
A→	5	3	1.75

$9.75 \xrightarrow{\times 40.} 390 \text{ Rs}$

$1Rs \rightarrow 5 \times 40 = \boxed{200 \text{ coins}}$
$50P \rightarrow 6 \times 40 = \boxed{240 \text{ coins}}$
$25P \rightarrow 7 \times 40 = \boxed{280 \text{ coins}}$

21.

$$\text{Boys} + \text{Girls} = \text{Total}$$
$$7 \qquad 5 \qquad = \qquad 12 \xrightarrow{\times 160} \boxed{1920}$$

Below 14 $\Rightarrow$ $\downarrow \frac{4}{7}$ $\qquad \downarrow \frac{3}{5}$
$$4 \qquad + \qquad 3 \qquad = \qquad 7 \xrightarrow{\times 160} 1120$$

22. $\dfrac{\sqrt{4.8 \times 10.8}}{\dfrac{2.4^2}{0.4}} = \dfrac{7.2}{14.4} = 1:2$

23. $(2x+1) \times 5 = (x+2) \times 2$

$10x + 5 = 2x + 4 \qquad \therefore x = -\frac{1}{8}$

$\therefore \sqrt{3.5\left(1 + \frac{1}{8}\right) \times 8\left(1 - \frac{1}{8}\right)}$

$\rightarrow \sqrt{\frac{7}{2} \times \frac{9}{8} \times 8 \times \frac{7}{8}} = \sqrt{\frac{49 \times 9}{16}} = \frac{21}{4}$

24. $x : 2x : 4x \rightarrow x^2 + 4x^2 + 16x^2 = 1029$

$21x^2 = \cancel{1029}\,49 \qquad \therefore x = 7$

$\therefore$ Req. diff $= 3x = 3 \times 7 = 21$ **Ans**

25. $\sqrt{(x+4)(3x+1)} = \cancel{15}, \cancel{10}, 12, \cancel{14}$

$x = 5 \qquad \frac{18}{34} = \frac{27}{51} \qquad (\checkmark)$

26. (c) Left $\Rightarrow 90 + 180 + 45° = 315°$
Right $= 135° + 45° = 180°$
Left $315°$ – Right $180°$
Left $= 135°$
We will rotate 135° Anticlock wise.

Ans. North

27. (b)
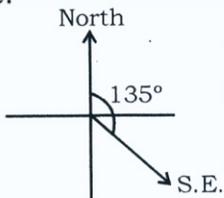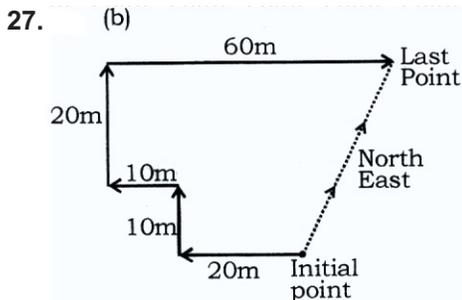
I was in the $\boxed{\text{North - East}}$ from Initial point
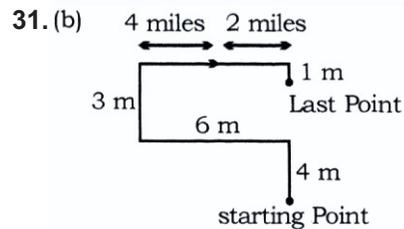
28. (d)
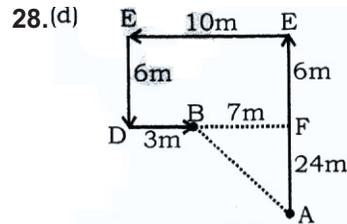
In triangle ABF

$AB = \sqrt{(AF)^2 + (FB)^2}$

$\sqrt{(24)^2 + (7)^2}$

$\sqrt{576 + 49}$

$\sqrt{625} = \textbf{25m (N.W)}$

29. (c)

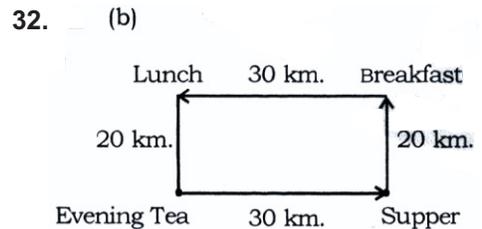From bus stand bus turns two times right and one time left. Hence we can cancel A right turn to a left turn. So Bus Face in **west** on Bus stand.

30. (c)

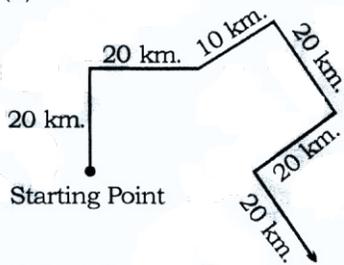Shadow is falling in the left of Shyam. Hence Shyam's face was in **North**

31. (b)

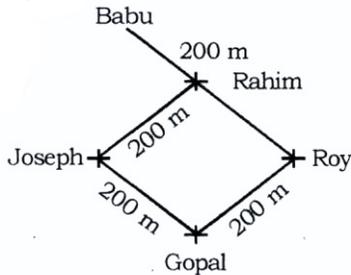Man facing to the **south** direction

32. (b)

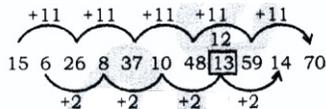He is driving to the **east** after evening tea.

33. (a)

He is facing **South-East**
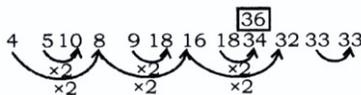
34. (a)

Roy's House is in **South-East** direction in Relation to Babu's House.

43. (a)

In the above series, 10 will be followed by 12. Therefore, the number 13, is wrong./उपरोक्त श्रृंखला में, 12 के बाद 10 होगा। इसलिए, संख्या 13, गलत है।

44. (c)

In the above series, 18 will be followed by 36. Thefore, 34 is wrong./उपरोक्त श्रृंखला में, 18 का अनुसरण 36 के बाद किया जाएगा। उपरोक्त, 34 गलत है।

45. (d) Each number is the sum of two consecutive square numbers, same as $1^2 + 2^2 = 5$, $3^2 + 4^2 = 25$, $5^2 + 6^2 = 61$ etc, and $11^2 + 12^2 = 265$ But the answer given is 266./त्येक संख्या दो लगातार वर्ग संख्याओं का योग है, जैसे $1^2 + 2^2 = 5$, $3^2 + 4^2 = 25$, $5^2 + 6^2 = 61$ आदि, और $11^2 + 12^2 = 265$ लेकिन दिया गया उत्तर 266 है।
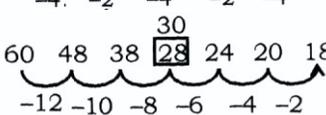
46. (c)

47. (c) 529 361 289 171 121 49
23^2 19^2 17^2 13^2 11^2 7^2
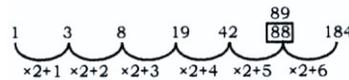−4 −2 −4 −2 −4
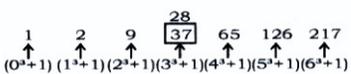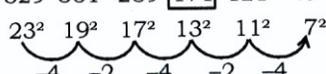
48. (d)

Therefore, 30 should be in place of 28./इसलिए, 28 के स्थान पर 30 होना चाहिए।

49. (c)

Therefore, 94 should be in place of 95./इसलिए 94 पद के स्थान पर 95 पद होना चाहिए।

50. (e)

Therefore, 89 should be in place of 88./इसलिए 89 पद के स्थान पर 88 पद होना चाहिए।

Answer

1. (d)	2. (a)	3. (a)	4. (b)	5. (c)	6. (d)	7. (a)	8. (a)	9. (a)	10. (b)
11. (d)	12. (b)	13. (b)	14. (a)	15. (b)	16. (b)	17. (d)	18. (a)	19. (b)	20. (b)
21. (d)	22. (b)	23. (c)	24. (a)	25. (c)	26. (c)	27. (b)	28. (d)	29. (c)	30. (c)
31. (b)	32. (b)	33. (a)	34. (a)	35. (a)	36. (b)	37. (b)	38. (e)	39. (a)	40. (d)
41. (a)	42. (d)	43. (a)	44. (c)	45. (d)	46. (c)	47. (c)	48. (d)	49. (c)	50. (e)
51. (a)	52. (d)	53. (c)	54. (c)	55. (b)	56. (b)	57. (c)	58. (a)	59. (b)	60. (c)
61. (a)	62. (b)	63. (d)	64. (a)	65. (c)	66. (b)	67. (c)	68. (b)	69. (b)	70. (b)
71. (b)	72. (d)	73. (a)	74. (b)	75. (b)	76. (d)	77. (c)	78. (d)	79. (a)	80. (d)
81. (d)	82. (b)	83. (a)	84. (d)	85. (c)	86. (a)	87. (b)	88. (b)	89. (b)	90. (a)
91. (b)	92. (b)	93. (b)	94. (b)	95. (a)	96. (a)	97. (b)	98. (a)	99. (a)	100. (b)