



KD Campus Pvt. Ltd

2007, OUTRAM LINES, 1ST FLOOR, OPPOSITE MUKHERJEE NAGAR POLICE STATION, DELHI-110009

SSC TIER II (MATHS) MOCK TEST - 22 (ANSWER KEY)

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

SSC TIER II (MATHS) MOCK TEST - 22 (SOLUTION)

1. (B) ATQ,

$$\text{Required number} = \frac{77}{(17-6)} \times 100 \times \frac{25}{100} = 175$$

2. (A) ATQ,

$$\begin{array}{r} 8 \quad 6561 \quad 81 \\ 8 \quad 64 \\ \hline 161 \quad 161 \\ \times 1 \quad 161 \\ \hline 0 \end{array}$$

Hence, 0 is subtracted from 6561 to make it a perfect square.

3. (A) ATQ,

$$\begin{array}{cccccc} 97 & 102 & 127 & 188 & 301 \\ \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ 1^2+2^2 & 3^2+4^2 & 5^2+6^2 & 7^2+8^2 & \end{array}$$

4. (B) ATQ,

$$\frac{6+4\sqrt{2}}{34+24\sqrt{2}} = \frac{3+2\sqrt{2}}{17+12\sqrt{2}} = \frac{3+2\sqrt{2}}{(3+2\sqrt{2})^2} = \frac{1}{3+2\sqrt{2}} = 3-2\sqrt{2}$$

5. (D) ATQ,

Let the natural number are x and y then the sum = $24x + 16y = 8(3x + 2y)$
Hence, sum should be multiple of 8.
So **option (D)** is only divisible by 8.

6. (C) ATQ,

$$\begin{aligned} 2x \times x &= 3200 \\ \Rightarrow x^2 &= 1600 \\ \Rightarrow x &= 40 \end{aligned}$$

Hence, the required number = **40**

7. (A) ATQ,

$$\frac{6}{7} = 0.857, \quad \frac{7}{8} = 0.875$$

$$\frac{9}{11} = 0.818, \quad \frac{13}{15} = 0.867$$

$$\text{Hence, required order} = \frac{9}{11} < \frac{6}{7} < \frac{13}{15} < \frac{7}{8}$$

8. (A) ATQ,

$$\begin{aligned} \text{Total number} &= \frac{900 \times 55}{100} + \frac{1300 \times 56}{100} + \frac{900 \times 35}{100} \\ &= 1538 \end{aligned}$$

9. (D) ATQ,

$$\begin{aligned} \text{Total number} &= \frac{850 \times 80}{100} + \frac{1300 \times 56}{100} + \frac{900 \times 35}{100} \\ &= 680 + 728 + 315 \\ &= 1723 \end{aligned}$$

10. (B) ATQ,

Total male population except village C

$$\begin{aligned} &= \frac{900 \times 45}{100} + \frac{60 \times 1100}{100} + \frac{44 \times 1300}{100} \\ &+ \frac{650 \times 40}{100} + \frac{900 \times 65}{100} \end{aligned}$$

$$= 405 + 660 + 572 + 260 + 585 = 2482$$

Then, Village C : Remaining Villages

$$\begin{array}{ccc} \frac{850 \times 20}{100} & : & \frac{2482}{5} \\ 25 & : & 73 \end{array}$$

11. (C) ATQ,

$$\begin{aligned} \text{Total number of villages} &= 900 + 1100 + 850 + 1300 + 650 + 900 \\ &= 7500 \end{aligned}$$

$$\text{Average number} = \frac{7500}{6} = 950$$

12. (B) ATQ,

Male in village C : Female in Village D

$$\begin{array}{ccc} \frac{850 \times 20}{100} & : & \frac{1300 \times 56}{100} \\ 85 & : & 364 \end{array}$$

13. (C) ATQ,

$$13\left(\frac{5}{13}\cos A + \frac{12}{13}\sin A\right) + 13$$

Let there is angle for which $\sin B = \frac{5}{13}$

and $\cos B = \frac{12}{13}$

$$\Rightarrow 13(\sin B \cos A + \sin A \cos B) + 13$$

$$\Rightarrow 13 \sin(A + B) + 13$$

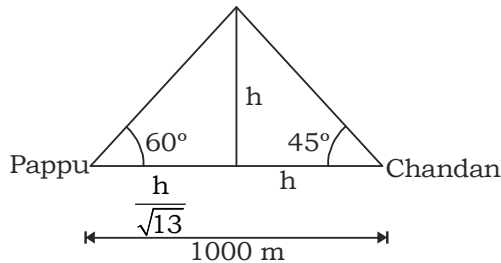
For maximum value $\sin(A + B) = 1$

$$\text{Then } 13 + 13 = 26$$

Hence, maximum value of

$$5 \cos A + 12 \sin A + 13 = \mathbf{26}$$

14. (B) ATQ,



$$\Rightarrow \frac{h}{\sqrt{3}} + h = 1000$$

$$\Rightarrow (\sqrt{3} + 1)h = 1000\sqrt{3}$$

$$\Rightarrow h = \frac{1000\sqrt{3}}{\sqrt{3} + 1} = \frac{1000\sqrt{3}(\sqrt{3} - 1)}{2}$$

$$\Rightarrow h = 500\sqrt{3}(\sqrt{3} - 1)$$

Hence, height of balloon

$$= \mathbf{500\sqrt{3}(\sqrt{3} - 1) \text{ m}}$$

15. (A) ATQ,

As we know,

$$\sec^2 A - \tan^2 A = 1$$

$$\Rightarrow \sec A - \tan A = \frac{1}{\sec A + \tan A}$$

Similarly,

$$\operatorname{cosec} A - \cot A = \frac{1}{\operatorname{cosec} A + \cot A}$$

Then, $\frac{\sec A - \tan A}{\operatorname{cosec} A + \cot A}$

$$= \frac{1}{(\sec A + \tan A)} \times (\operatorname{cosec} A - \cot A)$$

$$= \frac{\operatorname{cosec} A - \cot A}{\sec A + \tan A}$$

16. (D) ATQ,

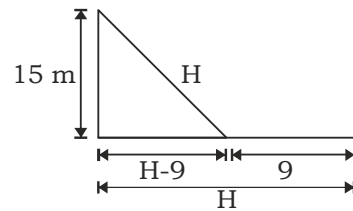
$$\frac{\sqrt{1 + \cot^2 A}}{\sec A} = \frac{\operatorname{cosec} A}{\sec A} = \frac{\cos A}{\sin A}$$

$$= \frac{2 \cos^2 A}{2 \sin A \cos A}$$

$$= \frac{2(1 - \sin^2 A)}{\sin 2A} = \frac{2}{\sin 2A} - \frac{2 \sin^2 A}{2 \cos A \sin A}$$

$$= \mathbf{2 \operatorname{cosec} 2A - \tan A}$$

17. (A) ATQ,



$$H^2 = (H - 9)^2 + 15^2$$

$$\Rightarrow 18H = 225 + 81 = 306$$

$$\Rightarrow H = 17$$

Hence, the required height = **17 m**

18. (C) ATQ,

$$1 + \cot^2 \theta - 1 + \sin^2 \theta - \frac{\sec^2 \theta}{\tan^2 \theta} + \cot^2 \theta \sin^2 \theta$$

$$= \operatorname{cosec}^2 \theta - \cos^2 \theta - \operatorname{cosec}^2 \theta + \cos^2 \theta = \mathbf{0}$$

19. (D)

20. (D) ATQ,

$$\cot \theta + \operatorname{cosec} \theta = 8 \quad \dots (i) \text{ then}$$

$$\cot \theta - \operatorname{cosec} \theta = -\frac{1}{8} \quad \dots (ii)$$

From equation (i) and (ii),

$$2 \cot \theta = 8 - \frac{1}{8} = \frac{63}{8}$$

$$\Rightarrow \tan \theta = \frac{1}{\cot \theta} = \frac{8 \times 2}{63} = \frac{\mathbf{16}}{\mathbf{63}}$$

21. (B) ATQ,

$$1 - \sin^2 \theta - \sec \theta = \cos^2 \theta - \sec \theta$$

$$= \frac{\cos^3 \theta - 1}{\cos \theta}$$

$$= \frac{(\cos \theta - 1)(\cos^2 \theta + 1 + \cos \theta)}{\cos \theta}$$

$$= \mathbf{(1 - \sec \theta)(\cos^2 \theta + 1 + \cos \theta)}$$

22. (D) ATQ,

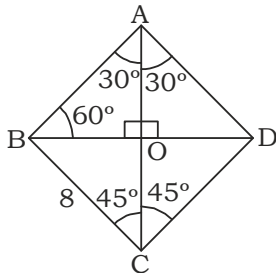
$$x + 5x = 180^\circ$$

$$\Rightarrow x = 30^\circ$$

Hence, required angle = **30°**

23. (C)

24. (C) ATQ,



In $\triangle DOC$

$$OC = \frac{8}{\sqrt{2}} = 4\sqrt{2}$$

In $\triangle AOB$,

$$OA = 4\sqrt{2} \times \sqrt{3} = 4\sqrt{6}$$

Hence, required length

$$= OC + OA = 4\sqrt{2} + 4\sqrt{6} = 4(\sqrt{2} + \sqrt{6})$$

25. (D) ATQ,

$$y - y_1 = \frac{(y_2 - y_1)(x - x_1)}{(x_2 - x_1)}$$

$$\Rightarrow y - 7 = \frac{(3 - 7)(x - 9)}{(4 - 9)}$$

$$\Rightarrow +5y - 35 = 4x - 36$$

$$\Rightarrow 4x - 5y = 1$$

Hence, required equation = $4x - 5y = 1$

26. (C) ATQ,

Length of diagonal of square = $\sqrt{2}a$ and

$$\text{the length of BG} = \frac{\sqrt{3}a}{2}$$

$$\text{Then, required ratio} = \frac{\sqrt{3}a}{2} : \sqrt{2}a$$

$$= \sqrt{3} : 2\sqrt{2}$$

27. (A) ATQ,

$$\text{Slope of } (3x - 2y = 13) = \frac{3}{2}$$

$$\text{Slope of } (4x + ky = 7) = -\frac{4}{k}$$

For perpendicular, the product of the slopes = -1

$$\text{Then, } \frac{3}{2} \left(-\frac{4}{k} \right) = -1$$

$$\Rightarrow k = 6$$

Hence, the value of $k = 6$

28. (C) ATQ,

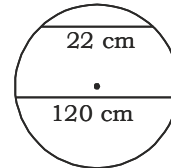
$$\frac{n(n-3)}{2} = 3n$$

$$\Rightarrow n = 9$$

Hence, required number = $9 \times 3 = 27$

29. (B) ATQ

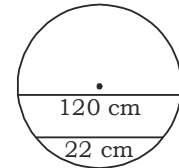
Case-I



When chords are present on opposite sides of centre, then distance

$$= \frac{120}{2} + \frac{22}{2} = 71 \text{ cms}$$

Case-II



When chords are present on the same side of centre, then distance

$$= \frac{120}{2} - \frac{22}{2} = 49 \text{ cms}$$

Hence, required distance = **71cms, 49cms**

30. (C) ATQ,

$$\angle BDC = 180^\circ - 60^\circ - \angle ADB = 30^\circ$$

[$\because \angle ADB = 90^\circ$ angle in half circle]

and

$$\angle ACD = 180^\circ - 54^\circ - \angle ACB = 36^\circ$$

[$\because \angle ACB = 90^\circ$ angle in half circle]

Hence,

$$\angle BDC + \angle ACD = 30^\circ + 36^\circ = 66^\circ$$

31. (C) ATQ,

$$\text{Required difference} = \frac{180}{15} \times (7 - 3) = 48^\circ$$

32. (A) ATQ,

$$\frac{28^\circ}{360^\circ} \times 2\pi \times r_A = \frac{140^\circ}{360^\circ} \times 2\pi r_B$$

$$\Rightarrow \frac{r_A}{r_B} = \frac{5}{1}$$

Then the ratio =

area of circle A : area of circle B

$$\pi r_A^2 : \pi r_B^2$$

$$25 : 1$$

Hence, required ratio = **25 : 1**

33. (B) ATQ,

$$50 \times x = (x - 5) \times 55$$

$$\Rightarrow x = 55$$

Hence, required person = **55**

34. (B) ATQ,

$$\frac{144 \times 42}{560} = \frac{36 \times M}{200}$$

$$\Rightarrow M = 60$$

Hence, required men = **60**



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35. (C) ATQ,

$$\frac{8 \times 6}{8400} = \frac{6 \times 9}{x}$$

$$\Rightarrow x = 9450$$

Hence, required amount = ₹ **9450**

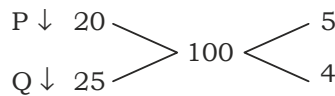
36. (B) ATQ,

$$8 \times 7 \times 6 = (8 + 4) \times 2 \times x$$

$$\Rightarrow x = 14$$

Hence, required hours = **14 hours.**

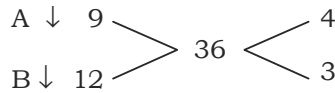
37. (D) ATQ,



$$\text{Hence, required time} = \frac{100 - (9 \times 4)}{4}$$

$$= \mathbf{16 \text{ minutes}}$$

38. (C) ATQ,



Hence, required time

$$= \frac{36 - [(4+3) \times 2]}{4}$$

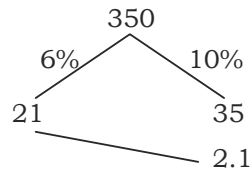
$$= \frac{36 - 14}{4} = \mathbf{5 \frac{1}{2} \text{ hours}}$$

39. (B) ATQ,

$$\text{Required amount} = \frac{8000 \times 8000}{10000}$$

$$= \mathbf{₹ 6400}$$

40. (C) ATQ,



$$\text{Hence, required amount}$$

$$= 350 + 21 + 35 + 2.1$$

$$= \mathbf{₹ 408.1}$$

41. (B) ATQ,

$$P \times \left(\frac{8}{100}\right)^2 = 160$$

$$\Rightarrow P = \frac{160 \times 100 \times 100}{64} = \mathbf{₹ 25000}$$

Hence, required amount = ₹ **25000**

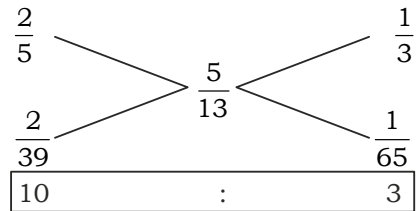
42. (D) ATQ,

Let the total quantity of mixture = (LCM of 16 and 18) = 144

Then,	Gold	:	Copper	in C
	81 + 56	:	63 + 88	
	137	:	151	

Hence, required ratio = **137 : 151**

43. (C) ATQ,



Hence, required ratio = **10 : 3**

44. (D) ATQ,

$$x + y = 80 \quad \dots(i) \quad \text{and}$$

$$x - y = 18 \quad \dots(ii)$$

From equation (i) and (ii)

$$x = 49 \text{ and } y = 31$$

Hence, required ratio = **49 : 31**

45. (B) ATQ,

	A	B	C
	3	1	
		6	1
\Rightarrow	18	6	1

Hence, required ratio = **18 : 6 : 1**

46. (C) ATQ,

$$\text{Required marks} = \frac{550}{68.75} \times \frac{100}{2} = \mathbf{400}$$

47. (B) ATQ,

$$\frac{8}{2}(6 + 7d) = \frac{2 \times 5}{2}(6 + 4d)$$

$$\Rightarrow 24 + 28d = 30 + 20d$$

$$\Rightarrow d = \frac{30 - 24}{28 - 20} = \frac{6}{8} = \frac{3}{4}$$

Hence, required difference = $\frac{3}{4}$

48. (A) ATQ,

$$35^{100} = (36 - 1)^{100}$$

$$= 36^{100} \times (-1)^0 + 36^{99} \times (-1)^1 + \dots +$$

$$36^1 \times (-1)^{99} + 36^0 \times (-1)^{100}$$

[By Binomial Theorem]

Except $36^0 \times (-1)^{100}$, all others are multiple of 36

$$\text{So, required remainder} = 36^0 \times (-1)^{100}$$

$$= \mathbf{1}$$

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49. (C) ATQ,

$$4x + 3 = 3x + 8$$

$$\Rightarrow x = 5$$

Hence, $(x + 1)^3 = \mathbf{216}$

50. (C) ATQ,

$$a - b = -6$$

Squaring both side

$$a^2 + b^2 - 2ab = 36$$

$$\Rightarrow 44 - 2ab = 36$$

$$\Rightarrow ab = \mathbf{4}$$

51. (D) ATQ,

a	b	c
9	11	
	5	9

Hence, required ratio = **45 : 55 : 99**

52. (C) ATQ,

$$x^{288} + 1 = (x^{96} + 1)(x^{192} + 1 - x^{96})$$

53. (B) ATQ,

$$\frac{5}{9} \neq \frac{8}{12}$$

Thus, there is **one** solution of the linear equations.

[Read the property of linear equation]

54. (A) ATQ,

$$x^2 + \frac{1}{x^2} = 2$$

$$\Rightarrow x + \frac{1}{x} = 2$$

Here, $x = \mathbf{1}$ and $\frac{1}{x} = 1$

Hence, $x^{99} + \frac{1}{x^{90}} = 1 + 1 = \mathbf{2}$

55. (B) ATQ,

$$a^4 + b^4 = a^2 b^2$$

$$\Rightarrow \frac{(a^2 + b^2)a^4 + b^4 - a^2 b^2}{(a^2 + b^2)} = 0$$

$$\Rightarrow a^6 + b^6 = 0$$

Hence, $a^6 + b^6 = \mathbf{0}$

56. (B) ATQ,

$$\frac{x+b+\frac{a}{x}}{bx-x^2} = \frac{x+\frac{a}{x}+b}{bx-x^2}$$

$$= \frac{b+b}{a} \left[\because x + \frac{a}{x} = b \right]$$

$$= \frac{\mathbf{2b}}{a}$$

57. (C) ATQ,

$$7x - 2 = \frac{7}{x}$$

$$\Rightarrow x - \frac{1}{x} = \frac{2}{7}$$

Taking cube on both sides

$$x^3 - \frac{1}{x^3} = \left(\frac{2}{7}\right)^3 - 3 \times \frac{2}{7} = \frac{8}{343} - \frac{294}{343}$$

$$= \frac{\mathbf{-286}}{\mathbf{343}}$$

58. (D) ATQ,

$$\frac{x^2 + 5x + 1}{x^2 + 12x + 1} = \frac{x + \frac{1}{x} + 5}{x + \frac{1}{x} + 12} = \frac{7}{14} = \frac{\mathbf{1}}{\mathbf{2}}$$

$$\left[\because x + \frac{1}{x} = 2 \right]$$

59. (C) ATQ,

$$9 \times (y - 2) \times \frac{5}{18} = (y - 4) \times \frac{5}{18} \times 10$$

$$\Rightarrow 9y - 18 = 10y - 40$$

$$\Rightarrow y = 22$$

Hence, length of train

$$= 9 \times (22 - 2) \times \frac{5}{18}$$

$$= \mathbf{50 \text{ m}}$$

60. (A) ATQ,

$$\text{Final selling price} = \frac{100000 \times 110 \times 95}{100 \times 100}$$

$$= 104500$$

Then, profit for X = 110000 - 104500

$$= \mathbf{₹ 5500}$$

61. (A) ATQ,

Selling price (100 + 10) textbooks

$$= 6000 + 600$$

$$= \mathbf{₹ 6600}$$

The selling price for 100 books = 6600

Then, profit = $\frac{(6600 - 6000)}{6000} \times 100 = \mathbf{10\%}$

62. (A) ATQ,

1 st	:	2 nd	:	3 rd
140	:	160	:	100
7	:	8	:	5

$$140 : 160 : 100$$

$$7 : 8 : 5$$

Hence, required ratio = **7 : 8**



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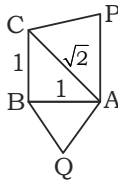
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63. (B) ATQ,
 Ratio of height of A and B
 = 135 : 100
 = 27 : 20
 Then, required percentage
 = $\frac{(27 - 20)}{27} \times 100$
 = **25.92%**

64. (B) ATQ,
 Ombir's salary = $\frac{780}{6} \times 100 \times \frac{140}{100}$
 = **₹ 18200**

65. (C) ATQ,
 $\frac{A \times 70}{100} = \frac{B \times 600}{100}$
 $\Rightarrow \frac{A}{B} = \frac{6}{7}$
 Then, required percentage
 = $\frac{B}{A} \times 100 = \frac{7}{6} \times 100 = \mathbf{116\frac{2}{3}}$

66. (A) ATQ,
 Ratio Area of $\triangle ACP$: Area of $\triangle ABQ$
 $\frac{\sqrt{3}}{4} (\sqrt{2})^2$: $\frac{\sqrt{3}}{4} (1)^2$
 2 : 1
 Hence, required area = **2 : 1**



67. (B) ATQ,
 Refrigerator's price = $\frac{4500}{(3-2)} \times 3$
 = **₹ 13500**

68. (A) ATQ,
 Cost price = $\frac{1440 \times 100}{120} = \mathbf{₹ 1200}$

69. (B) ATQ,
 Required time
 = (6 hr + 35 min) $\times 2$ - (6 hr + 35 min - 2 hr)
 = **8 hr + 35 min.**

70. (C) ATQ,
 $\frac{4.8}{(34+x)} = \frac{8}{60}$
 $\Rightarrow 34 + x = 36$
 $\Rightarrow x = 2$
 Hence, required speed = **2 kmph**

71. (A) ATQ,
 $\frac{x}{40} - \frac{x}{60} = 2$

$\Rightarrow 20x = 2 \times 2400$
 $\Rightarrow x = 240 \text{ km}$
 Hence required distance = **240 kms**

72. (B) ATQ,
 Required number
 = $1800 \times \frac{20}{100} \times \frac{3}{5} - 1800 \times \frac{12}{100} \times \frac{5}{12}$
 = $216 - 90 = \mathbf{126}$

73. (B) ATQ,
 Total sum
 = $1800 \times \frac{12}{100} \times \frac{5}{12} + 1800 \times \frac{18}{100} \times \frac{2}{3} +$
 $1800 \times \frac{15}{100} \times \frac{8}{15} + 1800 \times \frac{35}{100} \times \frac{11}{14} +$
 $1800 \times \frac{20}{100} \times \frac{3}{5}$
 = $90 + 216 + 144 + 495 + 216 = 1161$
 Required average = $\frac{1161}{5} \cong \mathbf{232}$

74. (A) ATQ,
 Required number
 = $1800 \times \frac{12}{100} \times \frac{7}{12} + 1800 \times \frac{35}{100} \times \frac{3}{14}$
 = $126 + 135 = \mathbf{261}$

75. (A) ATQ,
 Girls in Tennis : Boys in Swimming
 $1800 \times \frac{20}{100} \times \frac{3}{5} : 1800 \times \frac{18}{100} \times \frac{1}{3}$
2 : 1

76. (B) ATQ,
 Required number = $1800 - 1161$
 = **639**

77. (B) ATQ,
 Required number
 = $1236 - 7 \times 29 - 4 \times 45$
 = $7 \times 36 + 180 - 7 \times 29 - 180$
 = $7(36 - 29)$
 = **49**

78. (C) ATQ,

A	:	B	:	C
3	:	1	:	
		5	:	1
15	:	5	:	1

 Then, required number
 = $\frac{441 \times 3}{21} \times 15 = \mathbf{945}$

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79. (D) ATQ,

$$\frac{xy}{yz} = \frac{527}{992} = \frac{17 \times 31}{31 \times 32}$$

$$\Rightarrow \frac{x}{z} = \frac{17}{32}$$

So, numbers are 17, 31, 32

Then, required sum = 17 + 31 + 32 = **80**

80. (B) ATQ,

HCF of (989 - 5) and (1327 - 7) = 24

Hence, required number = **24**

81. (A) ATQ,

$$\frac{d^2}{2} = 10 \times 16$$

$$\Rightarrow d = \sqrt{2 \times 16 \times 10} = 4 \times 2\sqrt{5} \\ = \mathbf{8\sqrt{5}}$$

82. (B) ATQ,

$$\text{Time taken by pipe} = \frac{450 \times 250 \times 8}{0.3 \times 0.2 \times 30,000} \\ = \mathbf{500 \text{ hrs.}}$$

83. (C) ATQ,

Distance travelled by A is one minute

$$= \frac{2\pi r \times 10}{50}$$

Then, distance travelled by A in new circumstance

$$= \frac{2\pi r \times 10}{2\pi r \times 10} \times 50 = \mathbf{50 \text{ min}}$$

84. (B) ATQ,

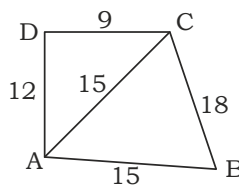
ADC is a right angle triangle and ABC is a scalene triangle

Then, area of ΔADC

$$= \frac{1}{2} \times 12 \times 9$$

$$= 54 \text{ cm}^2$$

and area of



$$\Delta ABC = \sqrt{24(24-15)(24-15)(24-18)}$$

$$= 108 \text{ cm}^2$$

Hence,

height of pyramid

$$= \frac{1458 \times 3}{(54 + 108)} = \mathbf{27 \text{ cm}}$$

85. (A) ATQ,

$$\text{Slant height} = \sqrt{(12)^2 + (3.5)^2} = 12.5$$

then, required area

$$= \frac{22}{7} \times 12.5 \times 12 = \mathbf{471 \text{ cm}^2}$$

86. (B) ATQ,

$$4 \times \pi \times 5 \times 5 = 5 \times \pi \times 4 \times l \\ l = 5$$

$$\text{Then, } h = \sqrt{5^2 - 4^2} = \sqrt{9} = 3$$

Hence, height of cone = **3 cm**

87. (C) ATQ,

Surface area of sphere = $4\pi r^2$ and,

curved surface area of cylinder

$$= 2\pi r \times 2r$$

Hence, required ratio = **1 : 1**

88. (B) ATQ,

Required amount

$$= \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2} \times 12 \times \frac{1600}{1000}$$

$$= \mathbf{739.2 \text{ l}}$$

89. (B) ATQ,

$$\text{Required number} = \frac{\frac{4}{3}\pi \times 6 \times 6 \times 6}{\frac{4}{3}\pi \times 3 \times 3 \times 3} = \mathbf{8}$$

90. (D) ATQ,

Required amount

$$= \frac{10,000 \times 50}{100} - \frac{10,000 \times \left(40 + 10 - \frac{40 \times 10}{100}\right)}{100}$$

$$= \mathbf{\text{₹ } 400}$$

91. (B) ATQ,

$$\text{Required percent} = \frac{(10-9)}{9} \times 100 = \mathbf{11\frac{1}{9}}$$

92. (A) ATQ,

Effective discount

$$= \frac{2 \times 25 + 4 \times 43}{6} = \frac{222}{6} = \mathbf{37\%}$$

93. (C) ATQ,

Charudatta's share

$$= \frac{936000 \times 5}{100} = \mathbf{\text{₹ } 187200}$$

94. (C) ATQ,

$$\text{Profit} = \frac{\left(x - \frac{(100-20)x}{100}\right)}{\frac{(100-20)x}{100}} \times 100 = \mathbf{25\%}$$

95. (D) ATQ,

Let the cost price = ₹ 100

and the article = 300

Then, **1st condition**



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selling price of 1st half article
= $150 \times 150 = ₹ 225000$

2nd condition

Selling price of remaining 1/3rd article

$$= 50 \times \frac{150}{100} \times 75 = ₹ 5625$$

3rd condition

Selling price for remaining article

$$= 100 \times \frac{150 \times 80}{100} = ₹ 12000$$

Then, Total selling price

$$= 22500 + 5625 + 12000 = 40125$$

Now,

$$\text{Profit} = \frac{(40125 - 300 \times 100)}{30000} \times 100$$

$$= \mathbf{33.75\%}$$

96. (C) ATQ,

$$9\% + 7\% = 80$$

$$16\% = 80$$

$$100\% = \frac{80}{16} \times 100$$

$$= ₹ 500$$

Hence, cost price of type writer = ₹ 500

97. (B) ATQ,

Cost price of milk in mixture

$$= \frac{9}{120} \times 100 = ₹ 7.5$$

Hence, required ratio = Milk : Water

$$750 : 1000 - 750 \\ \mathbf{3 : 1}$$

98. (B) ATQ,

Cost price of mixture

$$= \frac{40 \times 9 + 40 \times 8}{80} = ₹ 8.5$$

$$\text{Then, profit} = \frac{(9.35 - 8.5)}{8.5} \times 100 = \mathbf{10\%}$$

99. (B) ATQ,

LCM of 4, 5, 9 = 180

Then,

	Item	Price
1 — 5	180	36
1 — 4	180	45
2 — 9	360	80

There is a loss of ₹ 1 for 360 items

Then, for a loss of ₹ 4 = 360×4

$$= \mathbf{1440 \text{ items}}$$

100. (C) ATQ,

$$\text{Marked price} = \frac{240 \times 120}{90} = ₹ \mathbf{320}$$

Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003

Note:- Whatsapp with Mock Test No. and Question No. at 7053606571 for any of the doubts. Join the group and you may also share your suggestions and experience of Sunday Mock

Note:- If you face any problem regarding result or marks scored, please contact 9313111777

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