

Time allowed: 2 hrs.

REVISED ANSWER KEY AFTER ATTENDING CHALLENGES

1. D	25. A	49. B	73. B	97. C
2. C	26. C	50. C	74. A	98. Cancelled
3. A	27. B	51. C	75. B	99. B
4. D	28. D	52. B	76. D	100. B
5. D	29. B	53. C	77. C	101. C
6. A	30. D	54. B	78. C	102. D
7. A	31. B	55. A	79. D	103. C
8. B	32. A	56. A	80. C	104. C
9. C	33. C	57. C	81. B	105. D
10. D	34. A	58. B	82. A	106. A
11. D	35. B	59. C	83. D	107. B
12. A	36. C	60. C	84. C	108. Cancelled
13. B	37. D	61. B	85. C	109. Cancelled
14. C	38. B	62. D	86. A	110. B
15. A	39. B	63. C	87. A	111. C
16. A	40. C	64. B	88. B	112. B
17. C	41. A	65. B	89. C	113. A
18. B	42. B	66. D	90. C	114. B
19. B	43. B	67. C	91. B	115. A
20. D	44. C	68. A	92. D	116. A
21. A	45. C	69. B	93. C	117. D
22. C	46. D	70. A	94. B	118. B
23. B	47. B	71. D	95. A	119. B
24. C	48. C	72. D	96. D	120. A

(Since 3 Questions have been cancelled, evaluation will be done for a maximum marks of 117.)

SOLUTION TO THE PROBLEMS:

Q.No. 99. The number $x = 93636$ is a perfect square, then the sum of digits of $(x + \sqrt{x})$ is

Explanation:

$$x = 93636$$

$$\sqrt{x} = 306$$

$$(x + \sqrt{x}) = (93636 + 306) = 93942$$

$$= 9+3+9+4+2 = 27$$

Q.No. 108. If each edge of a cube increased by 50%, then increase in surface area will be

Explanation:

Let the edge = a cm

So increase by 50% = $a + a/2 = 3a/2$

Total surface Area of original cube = $6a^2$

$$\text{TSA of new cube} = 6(3a/2)^2$$

$$= 6(9a^2/4) = 13.5a^2$$

$$\text{Increase in area} = 13.5a^2 - 6a^2$$

$$= 7.5a^2$$

$$7.5a^2$$

$$\text{Increase \%} = \frac{7.5a^2}{6a^2} \times 100 = 125\%$$

Q.No. 109. The difference between increasing a number by 8% and decreasing it by 7% is 75. What is the number?

Let the number = x

$$(100\% + 8\%)x - (100\% - 7\%)x = 75$$

$$108\%x - 93\%x = 75$$

$$1.08x - 0.93x = 75$$

$$0.15x = 75$$

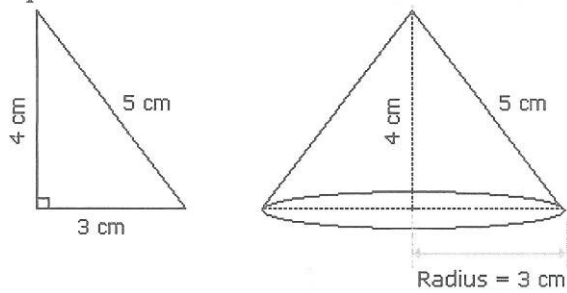
$$x = 75 : 0.15$$

$$x = 500$$

The number is 500

Q.No. 113. A right triangle with sides 3 cm, 4 cm and 5 cm is rotated to the side of 3cm to form a cone. The volume of the cone so formed is

Explanation:



Clearly, we have $r = 3$ cm and $h = 4$ cm.

$$\therefore \text{Volume} = \frac{1}{3}\pi r^2 h = \left(\frac{1}{3} \times \pi \times 3^2 \times 4\right) \text{cm}^3 = 12\pi \text{ cm}^3.$$

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