SSLC Mathematics State level Preparatory Key (2023-24)

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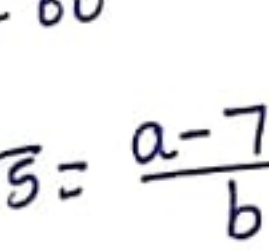
I

1. C) 2
2. B) $\frac{4}{3}\pi r^3$ cubic units
3. D) $b^2-4ac>0$
4. C) $\frac{\sqrt{3}}{2}$
5. A) 24
6. D) no solution
7. B) 13, 7
8. A) 8 cm

II

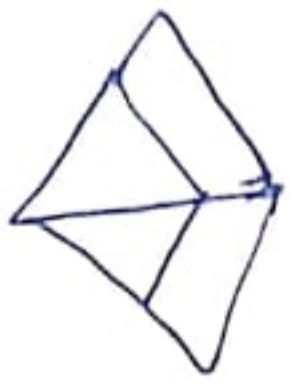
9. H.C.F = 12
10. $x=1, x=-3$
11. Volume $=\frac{1}{3}\pi h(r_1^2+r_2^2+r_1r_2)$
12. $\alpha+\beta=-7$
13. $\frac{\sin R}{\cos R}=\frac{12}{5}$
14. 0 (Impossible event)
15. $81cm^2$
16. $A=60^\circ$

III

17. $\sqrt{5}=\frac{a-7b}{b}$
18. $\frac{3\pm\sqrt{3}}{3}$
19. $x=3, y=3$
20. $S_{20}=1030$ (or)
21. P(-1, 3)
22. $P(\bar{A})=\frac{1}{4}$ $(P(\bar{A})\neq\frac{1}{2})$
23. 

24. $\frac{\sqrt{3}}{2}$ (or) Proof

IV

25. $q(x)=3x+10, r(x)=5$
(or)
x^2+3x+2 & $x=-1$ & -2
26. Theorem
27. 
8 cm, 5 cm, 6.5 cm
$\frac{8}{3}$
28. Mean = 11 (or) Mode = 19
29. 
30. 32 sq units
(or)
4 units, P(-1, 0)
31. $6.3cm^2$ & 22 cm
32. 5 Km/hr
(or)
Present age = 7 years
33. BC = 4 cm $(\frac{AC}{AB})$

V

34. 2, 7, 12, --- (a=2)
(or)
n = 17 (a=3, d=4)
35. x=3, y=2 (Graphically)
36. Theorem
37. EC = $20\sqrt{3}$ m
AE = $20\sqrt{3}$ m)
$\theta=60^\circ$

VI

38. $\lambda=17$ cm
T.S.A = $\frac{14960}{7}=2137.14cm^2$
Vol = $\frac{49280}{7}=7040\ cm^3$