

PRACTICE PAPER # 8

SOLUTION

MATHEMATICS (CLASS-X)

1. 3 OR 42, 21

2. $a = \frac{3}{2}$

5. 0

Hint: $\sec(15^\circ - \theta) = \operatorname{cosec}[90^\circ - (15^\circ - \theta)] = \operatorname{cosec}(75^\circ + \theta)$

$\cot(35^\circ - \theta) = \tan[90^\circ - (35^\circ - \theta)] = \tan(55^\circ - \theta)$

6. 126 cones

Hint: Total number of cones

$$= \frac{\text{Volume of sphere}}{\text{Volume of each cone}} = \frac{\frac{4}{3}\pi R^3}{\frac{1}{3}\pi r^2 h} = \frac{\frac{4}{3} \times \pi \times (10.5)^3}{\frac{1}{3} \times \pi \times (3.5)^2 \times 3} = \frac{1543.5 \pi}{12.25 \pi} = 126$$

7. $m = 2$

8. 163

9. $p = 12$

10. (i) $\frac{1}{6}$, (ii) $\frac{1}{6}$

11. $k = \frac{-3}{2}$ for collinear ar $(\Delta) = 0$

$$x_1(y_2 - y_3) + x_2(y_3 - y_1) + x_3(y_1 - y_2) = 0$$

12. 228 cm^2

13. Do it yourself.

3. $\sqrt{3}, 1$

4. $\angle B = 75^\circ$

14. Do it yourself. OR -1

15. $x = 4, y = 5.$

16. $\frac{a_1 + (m-1)d_1}{a_2 + (m-1)d_2} = \frac{14m - 6}{8m + 23}$

17. Do it yourself.

18. 294 cm^2

19. Do it yourself.

20. (i) $\frac{1}{4}$, (ii) $\frac{3}{4}$ (iii) Honest because an honest person always remains faithful.

HINTS AND SOLUTION

21. Do it yourself.

22. 21.5 cm^2

23. 60 km/hr, 40 km/hr

24. Do it yourself.

25. Do it yourself.

26. Mean = 145.20

Median = 138.57

Mode = 125

27. Surface area to be painted = 1980 cm^2

(a) With education and proper nurturance of their talent, they can contribute in a better way for the development of society and the country. So providing them opportunities to grow by giving proper education instead of involving them in work will help in the development of society.

(b) (i) Spreading awareness against child labour in the society.

(ii) Providing free education at elementary level to poor children.

(iii) Enforcing the law to abolish child labour.

28. $4000 \frac{(\sqrt{3}-1)}{\sqrt{3}} \text{ m} = 1690.53 \text{ m}$

29. $k = \frac{1}{2}$ OR AP : BP = 3 : 4

30. $58\sqrt{3} \text{ m}$