

Answers

Section A 1 mark each

1. $LCM = \frac{252 \times 756}{252} = 756$
2. No.
3. $k \neq \pm 6$, all real values of k except ± 6
4. **Hint** - First prove $\triangle EDF$ is a right triangle then use angle sum property of triangle.
5. $AB = 15$ cm. [**Hint** - Tangents from same external point to a circle are equal]
6. Mode = 41
7. Total outcomes = 8, $\frac{3}{8}$
8. $T_{12} = 0$
9. $A = 30^\circ$
10. $10\sqrt{2}\pi$ cm.

Section B 2 marks each

11. $DP:PE = 2:3$, $P\left(\frac{11}{5}, \frac{16}{5}\right)$
12. [**Hint** - $\frac{1}{2} fg = \frac{1}{2} de$. Then use Pythagoras theorem in $\triangle DFE$]
13. $x = 3, y = 2$ [**Hint** - add the given equations then subtract them and each time divide by common divisor]
14. $\frac{3}{7}$ [**Hint** - no of days in the month = 31, no of weeks = $4\frac{3}{7}$, remaining 3 days can be Sunday, mon, tue, Monday, tue, wed etc.]
- 15.

Section C 3 marks each

16.

17. (3, 1) (- 3, 1) [Hint - AP = 5, AP² = 25, x² + y² = 10y. Similarly find AQ]

18.

19. $\frac{-5}{8} \leq k \leq \frac{5}{8}$

20. A(1, 1), B(7, 1) and C(5, 7), area = 18 sq. unit

21. $\frac{29}{100}$ [Hint -

$$\begin{aligned} & \frac{1}{\alpha^2} + \frac{1}{\beta^2} \\ &= \frac{\alpha^2 + \beta^2}{\alpha^2\beta^2} \\ &= \frac{(\alpha + \beta)^2 - 2\alpha\beta}{(\alpha\beta)^2} \end{aligned}$$

22.

23.

24. 38.5 m², 328cm²

25. n = 60, sum = 32850

Section D 6 marks each

26. yes

27. 100, 80

28.

29. 1:2

30. 38.51

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