

CLASS 10 · HOTS · OLYMPIAD PREPARATION · DPP SHEET

Chapter 21: HOTS Questions for Class 10

Daily practice problems: 10 questions with an answer key

Try every question on your own first. The answer key is on the last page.

1. The HCF of two numbers is 18 and their LCM is 540. If one number is 90, find the other.
2. Find the largest number that divides 398, 436 and 542 leaving remainders 7, 11 and 15 respectively.
3. Find the values of k for which $x^2 + kx + 9 = 0$ has equal roots.
4. The sum of the squares of two consecutive positive integers is 313. Find the integers.
5. The sum of the first n terms of an AP is $4n^2 - n$. Find its 10th term.
6. In triangle ABC, DE is parallel to BC, with AD = 2 cm and DB = 3 cm. If the area of triangle ADE is 12 square cm, find the area of triangle ABC.
7. In what ratio does the y-axis divide the line segment joining $(-4, 5)$ and $(6, -3)$?
8. If $\tan \theta = \frac{5}{12}$, find $\sin \theta \cos \theta$.
9. The angle of elevation of the top of a tower from a point 30 m from its foot on level ground is 60° . Find the height of the tower.
10. A metal sphere of radius 3 cm is melted and recast into cones of radius 1 cm and height 3 cm. How many cones are made?

Answer Key

1. 108.
2. 17 (the HCF of 391, 425 and 527).
3. $k = 6$ or $k = -6$.
4. 12 and 13.
5. 75 (the n th term is $8n - 5$).
6. 75 square cm.
7. $2 : 3$.
8. $\frac{60}{169}$.
9. $30\sqrt{3}$ m, which is about 52 m.
10. 36.

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