

UNIT I -

TOPICS

1. Use properties of integer exponents to explain and convert between expressions involving radicals and rational exponents, using correct notation.
2. Prove (understand) that all circles are similar (and apply this property to solve problems)
3. Solve multi-step problems that can be represented algebraically with accurate and appropriately defined units, scales, and models (such as graphs, tables, and data displays).
4. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g. find the equation of a line parallel or perpendicular to a given line that passes through a given point.)
5. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.
6. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.
7. Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems
9. Solve problems using volume formulas for cylinders, pyramids, cones, and spheres.
10. Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).
11. Use density concepts in modeling situations based on area and volume. (e.g., persons per square mile, BTUs per cubic foot).