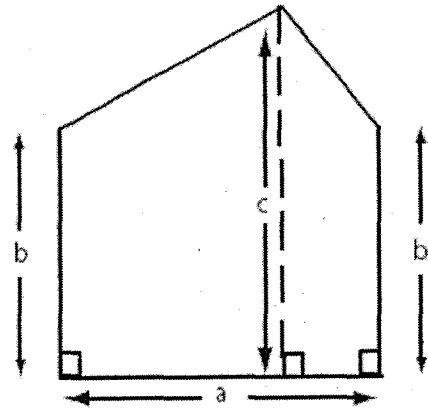
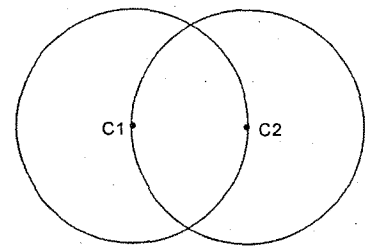


Problem 1: If 3 lead spheres of radii 3, 4 and 5 are melted to form a new larger sphere. What is the radius of the larger sphere assuming no lead is lost in the melting process?

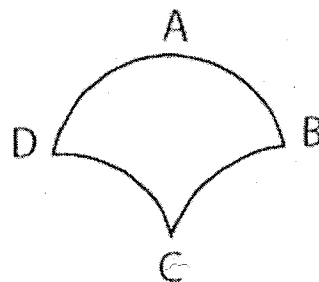
Problem 2: What is the area of the pentagon shown?



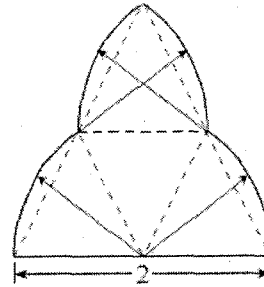
Problem 3: Two circles of radius 6 have centres C_1 and C_2 as shown. If the centre of each circle lies on the circumference of the other circle, calculate the total area covered by the two circles.



Problem 4: The figure ABCD shown in the diagram consists of 4 quarter circle arcs AB, BC, CD and DA, each of radius 4. What is the enclosed area?



Problem 5: The figure shown is called a trefoil and is constructed by drawing circular sectors about sides of the congruent equilateral triangles. What is the area of the trefoil whose horizontal base has a length of 2?



Problem 6: If each edge of a rectangular prism is increased by 20%, what is the percentage increase in its volume?

Problem 7: A company sells peanut butter in cylindrical jars. Marketing research suggests that using wider jars will increase sales. If the diameter of the jars is increased by 25%, without altering the volume, by what percent must the height be decreased?