TASK 8(CONTINUED AFTER QUESTION 17 to be included in File…….)

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18. Create a base class called shape. Use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called triangle and rectangle from base shape. Add to the base class, a member function get_data() to initialize base class data members and another member function display_area() to compute and display the area of figures. Make display_area() as a virtual function and redefine this function in the derived class to suit their requirements. Using these three classes, design a program that will accept dimensions of a triangle or a rectangle interactively and display the area. Remember the two values given as input will be treated as lengths of

two sides in the case of rectangles and as base and height in the case of triangle and used as follows:

Area of rectangle = x * y

Area of triangle = ½ *x*y

19. Create a base class called CAL_AREA(Abstract). Use this class to store float type values that could be used to compute the volume of figures. Derive two specific classes called cone, hemisphere and cylinder from the base CAL_AREA. Add to the base class, a member function getdata ( ) to initialize base class data members and another member function display volume( ) to compute and display the volume of figures. Make display volume ( ) as a pure virtual function and redefine this function in the derived classes to suit their requirements. Using these three classes, design a program that will accept dimensions of a cone, cylinder and hemisphere interactively
and display the volumes. Remember values given as input will be and used as follows:
Volume of cone = $(1/3)\pi r^2 h$
Volume of hemisphere = $(2/3)\pi r^3$
Volume of cylinder = $\pi r^2 h$