1. The equation of a line in standard form is , wherein both a and b cannot be zero, and a, b, and c are real numbers. If , then is the slope of the line. If a 0, then it is a horizontal line, and if b 0, then it is a vertical line. The slope of a vertical line is undefined. Two lines are parallel if they have the same slope or both are vertical lines. Two lines are perpendicular if either one of the lines is horizontal and the other is vertical or the product of their slopes is –1. Design the class lineType to store a line. To store a line, you need to store the values of a (coefficient of x), b (coefficient of y), and c. Your class must contain the following operations:
   1. If a line is nonvertical, then determine its slope.
   2. Determine if two lines are equal. (Two lines and are equal if either , , and or , , and for some real number k.)
   3. Determine if two lines are parallel.
   4. Determine if two lines are perpendicular.
   5. If two lines are not parallel, then find the point of intersection.
   6. Overloads the stream insertion operator, <<, for easy output.
   7. Overloads the stream extraction operator, >>, for easy input. (The line is input as (a, b, c).)
   8. Overloads the assignment operator to copy a line into another line.
   9. Overloads the unary operator +, as a member function, so that it returns true if a line is vertical; false otherwise.
   10. Overloads the unary operator -, as a member function, so that it returns true if a line is horizontal; false otherwise.
   11. Overloads the operator ==, as a member function, so that it returns true if two lines are equal; false otherwise.
   12. Overloads the operator ||, as a member function, so that it returns true if two lines are parallel; false otherwise.
   13. Overloads the operator &&, as a member function, so that it returns true if two lines are perpendicular; false otherwise.

Write a program to test your class.

Place all of your code in a single pdf file, including your output and submit on canvas.