public class Test {

public static void main(String args[])

{

Point p1 = new Point(1, 1);

Point p2 = new Point(4, 6);

Point p3 = new Point (1,1);

Point p4 = new Point(10,10);

Point p5 = new Point(-4, 6);

System.out.println("Consider 5 points on the X-Y plane...");

System.out.println("p1(" + p1.getX\_coord()+ ", " + p1.getY\_coord()+ ")");

System.out.println("p2(" + p2.getX\_coord()+ ", " + p2.getY\_coord()+ ")");

System.out.println("p3(" + p3.getX\_coord()+ ", " + p3.getY\_coord()+ ")");

System.out.println("p4(" + p4.getX\_coord()+ ", " + p4.getY\_coord()+ ")");

System.out.println("p5(" + p5.getX\_coord()+ ", " + p5.getY\_coord()+ ")");

System.out.println();

System.out.println("Now, let's perform some tests...");

try {

double grad1 = p2.gradient(p5);

System.out.println("Gradient between p2 and p5: " + grad1);

double grad2 = p3.gradient(p4);

System.out.println("Gradient between p3 and p4: " + grad2);

double dist1 = p1.distance(p5);

System.out.println("Distance between p1 and p5: " + dist1);

double dist2 = p3.distance(p4);

System.out.println("Distance between p3 and p4: " + dist2);

Point mid1 = p1.midpoint(p2);

System.out.println("Midpoint between p1 and p2: (" + mid1.getX\_coord()+ ", " + mid1.getY\_coord()+ ")");

Point mid2 = p3.midpoint(p4);

System.out.println("Midpoint between p3 and p4: (" + mid2.getX\_coord()+ ", " + mid2.getY\_coord()+ ")");

System.out.println("p1.is\_equal(p3): " + p1.is\_equal(p3)); // true

System.out.println("p3.is\_equal(p4): " + p3.is\_equal(p4)); // false

}

catch (ArithmeticException e)

{

System.out.println(e.getMessage());

}

System.out.println();

System.out.println("----end-of-program----");

}

}