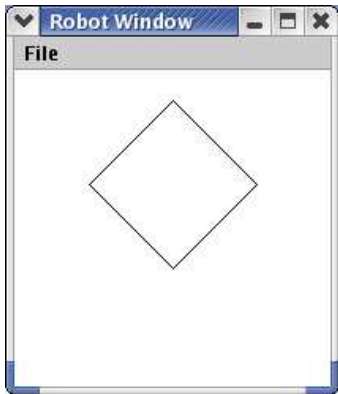


**Question J2-1:** (Solution, p 3)

Write a program that draws a diamond in a window, as illustrated below. (The diamond need not be the same size or in the same position.)



```
import csbsju.cs150.*;

public class DrawDiamond {
    public static void main(String[] args) {
        RobotWindow win = new RobotWindow();
        win.show();
    }
}
```

**Question J3-1:** (Solution, p 3)

Suppose the user runs the Java program at right, typing 5 when told to choose a number. What would the computer draw?



```
import csbsju.cs150.*;

public class Mystery {
    public static void main(String[] args) {
        RobotWindow win;
        win = new RobotWindow();
        win.show();

        double n;
        n = win.requestInt();

        Robot robbie;
        robbie = new Robot(win, n, n);
        robbie.move(200 - 2 * n);
        robbie.turn(-90);
        robbie.move(200 - 2 * n);
        robbie.turn(-135);
        robbie.move(200 - 2 * n);
        robbie.switchOff();
    }
}
```

**Question J4-1:** (Solution, p 3)

Suppose a user runs the Java program at right, entering 5 when told. When the program ended, how would its window appear?



```
import csbsju.cs150.*;

public class Mystery {
    public static void main(String[] args) {
        RobotWindow win;
        win = new RobotWindow();
        win.show();

        int num;
        num = win.requestInt();
        int drawn;
        drawn = 1;
        while(drawn <= num) {
            Robot r2d2 = new Robot(win, 10, 20 * drawn);
            r2d2.move(20 * drawn);
            drawn = drawn + 1;
            r2d2.switchOff();
        }
    }
}
```

**Question J4-2:** (Solution, p 3)

Suppose a user runs the Java program at right, entering 13, then 21, when told.

- a. Show the values taken on by the following variables as the program runs.

a  
b  
drawn

- b. When the program ended, how would its window appear?



```
import csbsju.cs150.*;

public class Mystery {
    public static void main(String[] args) {
        RobotWindow win;
        win = new RobotWindow();
        win.show();

        int a = win.requestInt();
        int b = win.requestInt();
        int drawn = 1;
        Robot r = new Robot(win, 70, 100);
        while(drawn < 6) {
            r.move(b);
            drawn = drawn + 1;
            r.turn(90);
            int c = a + b;
            a = b;
            b = c;
        }
        r.switchOff();
    }
}
```

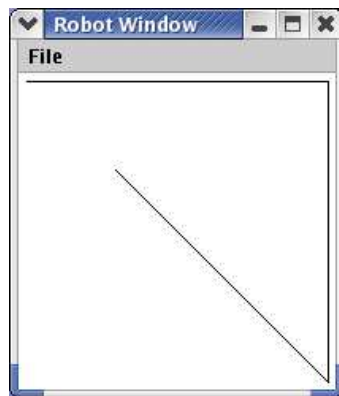
**Solution J2-1:** (Question, p 1)

```
import csbsju.cs150.*;

public class DrawDiamond {
    public static void main(String[] args) {
        RobotWindow win = new RobotWindow();
        win.show();

        Robot metroDome;
        metroDome = new Robot(win, 100, 125);
        metroDome.turn(45);
        metroDome.move(75);
        metroDome.turn(90);
        metroDome.move(75);
        metroDome.turn(90);
        metroDome.move(75);
        metroDome.turn(90);
        metroDome.move(75);
        metroDome.switchOff();
    }
}
```

**Solution J3-1:** (Question, p 1)



**Solution J4-1:** (Question, p 2)



**Solution J4-2:** (Question, p 2)

- a. a        13 21 34 55 89 144
- b        21 34 55 89 144 233
- drawn  1 2 3 4 5 6

b.

