Sýnislausnir á heimadæmum 6

1. Leggja saman jákvæðar tölur:

```
public class AddPositives {
   public static void main(String[] args) {
      int N = Integer.parseInt(args[0]);
      int sum = 0;
      for (int i = 0; i < N; i++) {
         StdOut.print("Enter positive number " + (i+1) + ": ");
         int x = StdIn.readInt();
         while ( x < 0) {
            StdOut.println(x + " is not positive");
            StdOut.print("Enter positive number " + (i+1) + ": ");
            x = StdIn.readInt();
         }
         sum += x;
      }
      StdOut.println("Sum is " + sum);
   }
}
```

2. Þjappa tölum af staðalinntaki og skrifa á staðalúttak:

```
public class Thjappa {
    public static void main(String[] args) {

        int last = StdIn.readInt();
        StdOut.println(last);

        while (!StdIn.isEmpty()) {
            int next = StdIn.readInt();
            if ( next != last ) {
                StdOut.println(next);
            }
            last = next;
        }
    }
}
```

3. Prenta út kommutölur á mismunandi formi:

```
public class Daemi3 {
    public static void main(String[] args) {

        double x = 12345.6789;

        StdOut.printf("%.2f\n", x);
        StdOut.printf("%10.3f\n", x);
        StdOut.printf("%.4f\n", x);
        StdOut.printf("%.6f\n", x);

    }
}
```

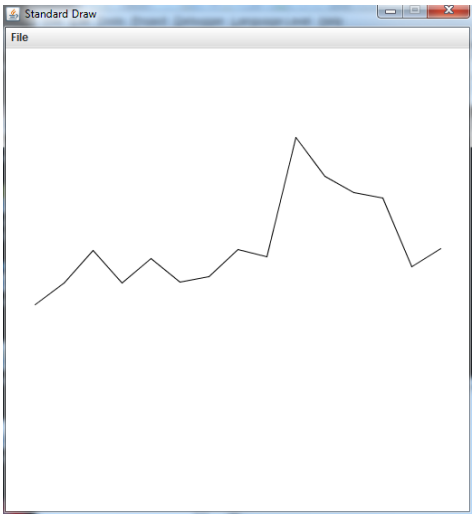
4. Sía sem teiknar línurit út frá gögnum á staðalinntaki:

```
public class GraphFilter {
    public static void main(String[] args) {

        // read in bounding box and rescale
        double xmin = StdIn.readDouble();
        double ymin = StdIn.readDouble();
        double xmax = StdIn.readDouble();
        double ymax = StdIn.readDouble();
        StdDraw.setXscale(xmin, xmax);
        StdDraw.setYscale(ymin, ymax);

        if (!StdIn.isEmpty()) {
            double x0 = StdIn.readDouble();
            double y0 = StdIn.readDouble();

            while (!StdIn.isEmpty()) {
                double x1 = StdIn.readDouble();
                double y1 = StdIn.readDouble();
                StdDraw.line(x0, y0, x1, y1);
                x0 = x1;
                y0 = y1;
            }
        }
    }
}
```



5. Útfæra nánar einfalda útgáfu af Pong:

Þessi útgáfa útfærir það sem beðið var um, en það væri hægt að hafa kóðann aðeins skýrari

```
import java.awt.event.KeyEvent;

public class PongGame {
    public static void main(String[] args) {

        // set the scale of the coordinate system
        StdDraw.setXscale(-1.0, 1.0);
        StdDraw.setYscale(-1.0, 1.0);

        // initial values of ball
        double radius = 0.05;
        double rx = Math.random()*(2.0-2*radius) - 1.0;
        double ry = Math.random()*(2.0-2*radius) - 1.0;
        double vx = 0.015;
        double vy = 0.023;

        // initial values of paddle
        double padTop = -0.85;
        double padBottom = -0.9;
        double[] px = {-0.2, 0.2, 0.2, -0.2};
        double[] py = {padTop, padTop, padBottom, padBottom};
        double dpx = 0.018;

        int points = 0;

        // main animation loop
        while (true)  {

            // check for ball touching paddle
            if ( (ry + vy < padTop + radius) &&
                 ((rx + vx > px[0] + radius) && (rx + vx < px[1]
+ radius)) ) {
                 vy = -vy;
                 points++;
            }
            // if ball lands on bottom then subtract 2 points
            if ( ry + vy < -1.0 + radius ) points -= 2;

            // bounce ball off wall according to law of elastic
collision
            if (Math.abs(rx + vx) > 1.0 - radius) vx = -vx;
            if (Math.abs(ry + vy) > 1.0 - radius) vy = -vy;

            // update ball position
            rx = rx + vx;
            ry = ry + vy;

            // check if paddle moved
```

```
            if (StdDraw.isKeyPressed(KeyEvent.VK_LEFT) &&
px[0]-dpx >= -1.0 )
                for (int i=0; i<4; i++)  px[i] -= dpx;
            if (StdDraw.isKeyPressed(KeyEvent.VK_RIGHT) &&
px[1]+dpx <= 1.0 )
                for (int i=0; i<4; i++)  px[i] += dpx;

            StdDraw.clear();

            // draw ball on the screen
            StdDraw.setPenColor(StdDraw.RED);
            StdDraw.filledCircle(rx, ry, radius);

            // draw paddle on the screen
            StdDraw.setPenColor(StdDraw.BLUE);
            StdDraw.filledPolygon(px, py);

            StdDraw.text(0.9, 0.95, points+" stig");

            // display and pause for 20 ms
            StdDraw.show(20);
        }
    }
}
```