Logic Lab

In this lab, we'll be finishing off our graph. So far we've got a title, some labels, axes, and some general lines. Let's put in the detail for our lines and add some numbers on the axes for scale.

Draw the numbers

1. In your clearCanvas() function, find where you're drawing the axes. Add a loop that cycles through the numbers from 1 to 30. Write each number on the X axis so that they stretch from the left side of the graph to the right side. (Hint: you'll use context.fillText(text, x, y)).
2. Now add the numbers on the Y axis. This time loop through the numbers from 0 to 100 by fives. (5, 10, 15, 20, 25, 30, and so on). Put those numbers on the left side from the bottom of the graph to the top.
3. Run and test. Got your numbers? Cool, let's draw some lines.

Draw background lines

Sometimes graphs can be hard to read. We see the data points, but can't trace those points back to the axis. Let's add some horizontal and vertical lines to help our viewers.

4. In a new loop, create a light horizontal line from the left side of the graph to the right every 5 units. (Hint: you'll use context.moveTo(x, y) and context.lineTo(x,y)).
5. Do the same with vertical lines from the bottom of the graph to the top for every one unit on the X axis.

Drawing the data

Lastly we should draw the data. Currently we have a function called drawTrends() which just draws a straight line. Let's add one to draw lines between each data point.

6. Open your drawOverallScore() function.
7. See if you can use a *for* loop to draw a line between each data point by going from 0 to 30.
8. Once you do this in one place, you should be able to run your page and see all five trends show up in different colors. Try it. Run and test.

When you have a full graph with 150 data points, you can be finished!

Bonus!! Drawing the data points

If you have time, draw a small circle around each data point on the graph so it isn't just lines, but lines with dots for each actual data point.

9. In drawOverallScore(), add a new for in loop, iterating through the keys of the color object. This'll give you all of your levels (excellent, good, okay, etc.).
10. Then in an inner loop, loop through the numbers 0 - 29 just as you did several times above.
11. For each level and for each data point, draw a small circle kind of like this:

```
ctx.arc(getXPointForDay(i),  // x location for the center
        getYPointForScore(raw_survey_results[i][level]),  // y location
        2,                   // Radius
        0,                   // Start angle
        2 * Math.PI / 180,   // End angle (2 radians = 360°)
        true                 // Counter clockwise
        );
```

Now your datapoints are emphasized. Nice!