

CPSC 1045: Worksheet 3-Canvas

Please answer in a separate text file and submit in the drop box.

- 1) What is a drawing context and how do we obtain it?
- 2) What tag is used to add a canvas to the HTML page?
- 3) What is the purpose of the id attribute in the canvas tag?
- 4) Which command do you use to draw the path?
- 5) What shape would the following code snippet draw? Where is it drawn?

```
ctx = drawingSurface.getContext("2d");
ctx.save();
ctx.translate(0,100);
ctx.fillStyle = "blue";
ctx.fillRect(10, 50, 80,80);

ctx.strokeStyle = "blue";
ctx.beginPath();
ctx.lineTo(0,50);
ctx.lineTo(50,0);
ctx.lineTo(100,50);
ctx.lineTo(0,50);
ctx.stroke();
ctx.fill();

ctx.fillStyle = "black";
ctx.fillRect(60,90,20,40);

ctx.fillRect(15,60,40,40);
ctx.strokeStyle = "blue";
ctx.beginPath();
ctx.lineTo(15,80);
ctx.lineTo(55,80);
ctx.stroke();
ctx.beginPath();
ctx.lineTo(35,60);
ctx.lineTo(35,100);
ctx.stroke();

ctx.restore();
```

- 6) What shape does the following code draw and where on the canvas does it draw it?

```
filename: fig.html
<!DOCTYPE html>
<head>
  <title>Figure</title>
  <meta charset="UTF-8">
  <script src="fig.js" defer></script>
</head>
<body>
  <h1>Draw shape</h1>
```

```

        <canvas id="ds" width="400px" height="400px"
                style="border : solid"></canvas>
</body>

```

filename: fig.js

```

//Get reference to canvas
var drawingSurface = document.getElementById("ds");
var ctx = drawingSurface.getContext("2d");

ctx.save();
//Move origin to the centre of the canvas
ctx.translate(drawingSurface.width/2, drawingSurface.height/2);
ctx.beginPath();
ctx.lineTo(0,100);
ctx.rotate(15*Math.PI/180);
ctx.lineTo(0,150);
ctx.rotate(15*Math.PI/180);
ctx.lineTo(0,150);

ctx.rotate(15*Math.PI/180);
ctx.lineTo(0,120);

ctx.rotate(135*Math.PI/180);
ctx.lineTo(0,10);
ctx.stroke();
ctx.restore();

ctx.save();
//Move origin to the centre of the canvas
ctx.translate(drawingSurface.width/2, drawingSurface.height/2);
ctx.beginPath();
ctx.lineTo(0,100);
ctx.rotate(-15*Math.PI/180);
ctx.lineTo(0,150);
ctx.rotate(-15*Math.PI/180);
ctx.lineTo(0,150);

ctx.rotate(-15*Math.PI/180);
ctx.lineTo(0,120);

ctx.rotate(-135*Math.PI/180);
ctx.lineTo(0,10);

ctx.stroke();
ctx.restore();

```

7) Fix the error in the following page.

filename: fig.html

```

<!DOCTYPE html>
<head>
    <title>Figure</title>
    <meta charset="UTF-8">
</head>
<body>
    <h1>Draw shape</h1>
    <canvas id="ds" width="400px" height="400px"
        style="border : solid"></canvas>

```

</body>

filename:fig.js

```
//Get reference to canvas
var canvas = document.getElementById("ds");
var ctx = canvas.getContext("2d");

ctx.save();
ctx.translate(canvas.width/2 canvas.height/2);
ctx.beginPath()
ctx.lineTo(100,0);
ctx.rotate(90*Math.PI/180)
ctx.lineTo(100,0);
ctx.rotate(90*Math.PI/180)
ctx.lineTo(100,0);
ctx.rotate(90 )
ctx.lineTo(100,0;
ctx.rotate90*Math.PI/180)
ctx.lineTo(100,0);
ctx.stroke();

ctx.restore;
```