Javascript Programming: Objects

Part 1
Paste this code into Khan
background(181, 237, 161);
fill(0, 0, 0);

ellipse(200, 200, 375, 375);
fill(255, 255, 255);
var answer = floor(random(1, 5));
var integer = round(answer);
if (answer === 1) {
    text("Question 1", 176, 200);
}
else
    if (integer === 2) {
        text("Question 2", 176, 200);
    } else
    if (integer === 3) {
        text("Question 3", 176, 200);
    } else
    if (integer === 4) {
        text("Question 4", 181, 200);
    } else
    if (integer === 5) {
        text("Question 5", 176, 200);
    }
fill(191, 226, 230);
ellipse(20, 20, 33, 33);
fill(18, 11, 11);
ellipse(14, 20, 2, 2);
ellipse(24, 20, 2, 2);
ellipse(20, 26, 3, 3);

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Modify the code so that it does the same thing, but:
• Uses a function to do all of the drawing
• Uses an object for all of the properties of the thing being drawn
• Uses an array of messages instead of "if/else" statements to write the message in
  response to the random number

Answer Point Value: 4.0 points
Model Short Answer: background(181, 237, 161);
fill(0, 0, 0);
var eightBall = {
  xCenter: 200,
  yCenter: 200,
  size: 375,
};

var draw_8Ball = function() {
  ellipse(eightBall.xCenter, eightBall.yCenter, eightBall.size, eightBall.size);
  fill(255, 255, 255);
  var answer = floor(random(1, 5));
  var integer = round(answer);
  text(eightBall.messages[integer], 180, 230);
};

draw_8Ball();
Consider the Khan Javascript code:

```javascript
background(181, 237, 161);
fill(0, 0, 0);

var EightBall = function (x,y,s) {
    this.xCenter = x;
    this.yCenter = y;
    this.size = s;
    this.messages = ["Message 1", "Message 2", "Message 3", "Message 4", "Message 5"];
};

EightBall.prototype.draw = function() {
    fill(0,0,0);
    ellipse(this.xCenter, this.yCenter, this.size, this.size);
    var answer = floor(random(1, 5));
    var integer = round(answer);
    fill(255, 255, 255);
    text (this.messages[integer],this.xCenter - this.size/4 ,this.yCenter);
}

var ballLeft = new EightBall (100,100,120);
var ballRight = new EightBall (250,100,120);

ballLeft.draw();
ballRight.draw();
```

Match the concept with the code fragment for this code. You may use the Khan Programming environment and your hand-written notes, but no other sources.

1. var EightBall = function (x,y,s) {
   A. Constructor function that creates the EightBall object instance when the object is declared.
2. EightBall.prototype.draw = function()               B. Method for all objects of type EightBall
3. this.xCenter = x;                                      C. Call a method on an object of type eightBall.
4. ballLeft.draw();                                       D. Creates a property in objects of type eightBall
Answer Point Value: 4.0 points
Answer Key: 1:A, 2:B, 3:D, 4:C