



Clearly print (not sign) your name:

If you are sick or otherwise temporarily impaired, then request that you take the exam at a later time. This examination is an opportunity for you to demonstrate the great things you know about the topic. It is not intended as a test of how well you can perform while sick or otherwise unduly stressed.

You may use one page of handwritten notes (both sides) and a non-electronic dictionary. **No phones, calculators, tablets, laptops or other microprocessors are allowed.** Write your answers on the exam. You may use extra scratch paper (blank, ruled or graph).

When a question asks: “What is displayed on the canvas?” then, you need only answer what is actually displayed (there is no need to give a complete sentence). For example, if the question says:

The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser’s console. What text is displayed?

```
var z = 2;  
z = z + 1;  
console.log(z);
```

Then the full-credit answer is simply:

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Usually, a box around the answer is not necessary; however, if you think your answer might be difficult to distinguish from any intermediate scratch work you might have written on the page, then draw a box around the part you want graded as your answer.

If your answer is correct, then any scratch work is ignored. However, if your answer is wrong, then any scratch work you provide may be useful for awarding partial credit. If you choose to use extra scratch paper, you may keep it or turn it in with your exam. If you choose to turn in extra scratch paper, then **print your name** at the top of each page and label scratch work with the question number to which it pertains.

This exam is designed for a 75 minute period.



- 1) The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser's console. What text is displayed?

```
var zu = 4 + 6 * 2 + 7;  
console.log("zu " + zu);
```

- 2) The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser's console. What text is displayed?

```
var sansa = 3;  
var cersei = 5;  
var bran = 100;  
bran = cersei + sansa;  
sansa = bran + cersei;  
cersei = sansa + bran;  
bran = cersei + sansa;  
console.log(sansa + ", " + cersei + ", " + bran);
```

- 3) The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser's console. What text is displayed?

```
var ned = 16 % 4;  
var catelyn = 18 % 4;  
console.log(ned + ", " + catelyn);
```



- 4) The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser's console. What text is displayed?

```
var jon = 2;
var arya = 3;
if (jon > arya)
{
    jon = jon + 3;
}
else if (arya > 1)
{
    arya = arya + 5;
}
else if (jon > 0)
{
    jon = arya + 10;
}
console.log("jon="+jon);
console.log("arya="+arya);
```

- 5) What would be displayed in the console if the first line of the program above was replaced with:

```
var jon = 1;
```



- 6) The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser's console. What text is displayed?

```
var jon = 3;
var arya = 2;
if (jon < arya)
{
    jon = jon + 5;
}
if (jon > 6)
{
    arya = arya + 5;
}
if (arya === 7)
{
    jon = arya + 100;
}
if (jon === 3)
{
    jon = jon + arya;
}
console.log("jon="+jon);
console.log("arya="+arya);
```



- 7) The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser's console. What text is displayed?

```
var i = 0;
while (i <= 10)
{
    console.log(i);
    i = i + 3;
}
console.log("Done: i=" + i);
```



- 8) The JavaScript / p5.js code below runs in Chrome without errors and displays text to the browser's console. What text is displayed?

```
createCanvas(500, 500);
background(255, 255, 255);
var myFontSize = 14;
textSize(myFontSize);

fill(0, 0, 0);
var bottom = myFontSize;
var a = 11;
var powerOf2 = 16;
text(a+"=", 0, bottom);
bottom += myFontSize;
while (powerOf2 >= 1)
{
  if (a >= powerOf2)
  {
    text("1 x "+powerOf2, 0, bottom);
    a = a - powerOf2;
  }
  else
  {
    text("0 x "+powerOf2, 0, bottom);
  }
  powerOf2 = powerOf2 / 2;
  bottom += myFontSize;
}
text("Done: a=" + a, 0, bottom);
```



- 9) The JavaScript / p5.js code below is placed in the `setup()` function of a `<script>` in an HTML5 document. It runs in Chrome without errors. Sketch a reasonable approximation of what it draws on a white canvas.

```
createCanvas(200, 200);  
stroke(0,0,0);  
var i = 0;  
while (i<=200)  
{  
  line(100, 200, i, 0); //x1,y1,x2,y2  
  i += 10;  
}
```



- 10) The JavaScript / p5.js code below is placed in the `setup()` function of a `<script>` in an HTML5 document. It runs in Chrome without errors. Sketch a reasonable approximation of what it draws on a white canvas.

```
createCanvas(200, 200);  
stroke(0,0,0);  
var i = 0;  
while (i<=200)  
{  
  line(100-i/2, i, 100+i/2, i);  
  i += 10;  
}
```