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# Intro to Programming Midterm

November 10th 2011

*For this test you can assume there is a `printLine()` function. The `printLine` function takes a variable number of arguments separates them with spaces and displays them on the page followed by a newline character (Just like the one from the homework).*

*There are a total of 115 possible points on the test. Your grade will be out of 100 however, so there is possibility of earning up to 15 bonus points.*

*I recommend getting the ones you know first and coming back for the rest.*

## #1 [5 points]

Circle the JavaScript **primitive** data types.

string	int	array	undefined	null	boolean
object	number	float	char	unicode	regex

## #2 [5 points]

What are reserved words? Why would you need to know about them? Give a few examples of reserved words.

## #3 [5 points]

Circle the valid variable identifiers:

name	last-name	\$this	2ndYear	_school
class	robot_chemistry	dangerousAnimal		

## #4 [5 points]

Is this true or false?

```
((4 > 6) || ("grass" === "grass")) && !(((3 * 3) !== 9) && true)
```

## #5 [4 points]

Define the word abstraction in your own words. Why is it important?

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**#6** [2 points]

What operator do you use to concatenate?

**#7** [5 points]

Test num to see if it is a number. If it is then print the number otherwise print an error?

```
var num = prompt("enter a number");
```

**#8** [5 points]

Write a program that simulates rolling a dice. It should print 1,2,3,4,5, **or** 6 with an equal probability.

**#9** [3 points]

Can you describe the relationship between global variables and the window object? Why should global variables be avoided? Why do you need them?

**#10** [5 points]

What will price equal?

```
var product = "Mac Pro";
```

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```
var price;
switch(product){
  case "iMac":
    price = 1199;
  case "Mac Pro":
    price = 2499;
  case "Mac mini":
    price = 599;
  case "MacBook Air":
    price = 999;
}
```

**#11 [3 points]**

Write JavaScript code to store your first name and last name in separate variables. Then print them together with a space in between.

**#12 [3 points]**

Write a function named isEven that returns true if its parameter is an even number and false if it is odd?

**#13 [2 points]**

Execute isEven with the parameter 5 and print the result?

**#14 [3 points]**

What is the purpose of jQuery's \$(document).ready() function?

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**#15** [10 points]

What does the following code draw?

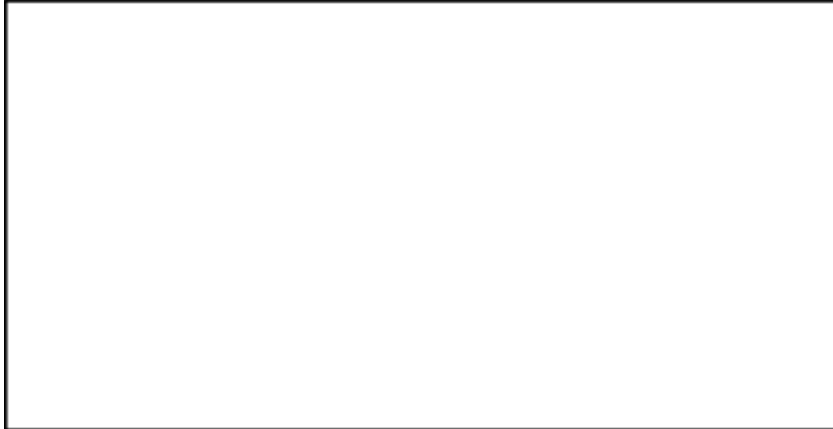
assume this html:

```
<canvas id="canvas" width="500" height="300" />
```

```
var canvas = document.getElementById('canvas');
var ctx = canvas.getContext('2d');
// fillRect(x, y, width, height)
ctx.fillRect(50,100,50, 50);
ctx.fillRect(400,100,50, 50);
ctx.fillRect(50,152,400, 50);

ctx.beginPath();
// arc(x, y, radius, startAngle, endAngle, anticlockwise)
ctx.arc(250, 227, 25, 0, Math.PI*2, true);
ctx.closePath();
ctx.fill();
```

Assume this box is 300x500



**#16** [5 points]

Describe the purpose of the following operators and expressions in JavaScript?

!

;

=

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===

\*

%

++

**break**

**return**

**#17** [6 points]

What does the following print?

```
var s = "foo";
function a(){
  function b(word){
    printLine(word);
  }
  function c(){
    s = "baz";
  }
  c();
  b("bar");
}
a();
printLine(s);
```

**#18** [3 points]

What values are falsey in JavaScript?

**#19** [5 points]

Finish this code snippet to printLine the value of **pi** with only two decimal places.

```
var pi = 3.14159;
```

**#20** [10 points]

Write an email signature function that takes in:

- name

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- title
- company
- email address
- phone number

and prints something that would look like an email signature. Call the function with your information.

**#21** [20 points]

Write code that does the following:

- Asks the user for a number between 2 and 10.
- Prints a square on the screen using # with a width and height dependent on the given number.

For example if the user enters 2 you would print

```
##  
##
```

If they enter 4 you would print

```
####  
####  
####  
####
```

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and so on...