Announcements

• First exam is on Monday 03/05 (One week from today).
Return Quizzes

- Listen for your group....
- Let’s go over the answers quickly
Type Conversions

Usually JavaScript automatically converts things:

```javascript
string1 = "40";
string2 = "30";
product = string1 * string2;  // works
```

It doesn’t always work out...

Example: NumberConversion1.html
Type Conversions

To convert from string to number:

"40" // This is a String (text)
Number("40") // This is the number 40

Always Use Number function when prompting for a numerical value.

var size = Number(prompt("Enter size: "));

Example: NumberConversion2.html
More Math...

There are lots of built-in math functions.

Examples:

- `result = Math.abs(-7);`  // result will be 7
- `result = Math.max(3, 23);`  // result will be 23
- `result = Math.min(3, 23);`  // result will be 3
- `result = Math.sqrt(16);`  // result will be 4
- `result = Math.PI;`  // 3.1415926....
- `result = Math.random();`  // result will be a  
  // random value  
  // between 0 and 1
Comparisons and Boolean Variables

Comparison Operators

These work as you would expect:

\[ x < y \]
\[ x > y \]
\[ x \leq y \]
\[ x \geq y \]

These are “boolean expressions” (either true or false)
Equality Operators

Checking for equality is confusing

There are TWO equality operators:

\[ x \ == \ y \] \quad \text{true if } x \text{ and } y \text{ evaluate to the same value}

\[ x \ === \ y \] \quad \text{true if } x \text{ and } y \text{ are the same TYPE and also evaluate to the same value}

We strongly favor using \[ === \] \quad (You’ll see why later...)

Example:

\[ x = 5; \]
\[ y = "5"; \]
\[ x == y \quad // \text{this is true} \]
\[ x === y \quad // \text{this is false} \]
Equality Operators

Two more operators:

\[ x \neq y \quad \text{opposite of} \quad x = y \]

\[ x \neq= y \quad \text{opposite of} \quad x === y \]
If-Statement

Behavior depends on a “condition”...

Simple Example:

```javascript
x = Number(prompt("Enter first value: "));
y = Number(prompt("Enter second value: "));
if ( x < y ) {
    alert("THE FIRST VALUE WAS SMALLER");
}
alert("That was fun.");
```

Example: IfStatements.html