Announcements

• Please bring laptops to class on Wednesday
• Project #2 is due on Thursday
• Midterm Exam is next week (Monday 10/12)
• Term Paper assignment has been posted
Recall: Type Conversions

Use Number function when prompting for a numerical value:

```javascript
var size = Number(prompt("Enter size"));
```

Example: Input2.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:

\[ x == y \]  true if \( x \) and \( y \) evaluate to the same value

\[ x === y \]  true if \( x \) and \( y \) are the same TYPE and also evaluate to the same value

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

Example:

\[ x = 5; \]
\[ y = "5"; \]
\[ x == y \]  // this is true
\[ x === y \]  // this is false

Example: Comparisons.html
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
If-Else-Statement

Two possible paths – One or the other will happen...

Simple Example:

```javascript
x = Number(prompt("Enter first value: "));
y = Number(prompt("Enter second value: "));
if ( x === y ) {
    alert("THE VALUES ARE THE SAME");
} else {
    alert("THE VALUES ARE DIFFERENT");
}
alert("That was fun.");
```

Example: IfElseStatements.html
Nested Conditionals

Conditional statements can be nested inside each other:

```
if (...) {
    if (...) {
    } else {
    }
} else {
    if (...) {
    }
}
```

Example: Nested.html