Pas discussion:

Note:

\[ 0 \leq \text{mouse}_X - 20i < 20 \]

\[ 20i \leq \text{mouse}_X < 20 + 20i \]

\[ i \leq \frac{\text{mouse}_X}{20} < i + 1 \]

\[ i = \lfloor \text{mouse}_X / 20 \rfloor \]

also \[ i = \lfloor \text{mouse}_Y / 20 \rfloor \]
Scope of Variables

we can declare variables inside a function. This creates local variables, variables whose scope is function body only.

Note: The scope of a variable is where the variable can be accessed.

Note: Function parameters have as scope the function body.
- Variables declared outside all functions have **Global** scope, i.e. the entire file.

- When two variables with same name have overlapping scope, the local variable **masks** the global variable.

- System variables have global scope. So, a local variable called `mooseX` would **override** the `sys.var`. 


however variables with same name and non-overlapping local scopes are fine.

Ex: ScaleOfVariables

Problem: draw a stick figure at a point \((x, y)\)

Write a function to do this.
void drawMan(float x, float y)
{
    //
    //
}

Ex: Stick Man

Note:

to limit i = 0; i < 10; i++)
    // do something

Scale at i is body at 100
Ex. Function 4

Output

\[ \begin{align*}
& a \\
& b \\
& c \\
& \vdots \\
& f \\
& g \\
& h \\
& i \\
\end{align*} \]

Ex. Marbles

\[ \begin{align*}
& 1 \\
& 2 \\
\end{align*} \]
Chapter 8: Objects

another function example:
draw a car